INTRODUCTION TO

AIR CAVALRY

OPERATIONS

Armor Cavalry Tactics Division
Command & Staff Department
U.S. Army Armor Center

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INTRODUCTION

AIR CAVALRY IS AN INTEGRAL COMPONENT OF ALL CAVALRY ORGANIZATIONS. COMMANDERS AND STAFF OF ALL LEVELS MUST UNDERSTAND AIR CAVALRY ORGANIZATIONS, HOW THESE ASSETS ARE EMPLOYED AND HOW THEY ARE SUPPORTED. THE PURPOSE OF THIS HANDOUT IS TO PROVIDE THE STUDENT WITH A BASIC KNOWLEDGE OF AIR CAVALRY OPERATIONS.

ORGANIZATION

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Section II

AIR CAVALRY ORGANIZATIONS

2-1 Regimental Aviation Squadron

A Regimental Aviation Squadron (RAS) is organic to each ACR. The RAS consists of a Headquarters Troop (HHT), an Assault Helicopter Troop (AHT), two Attack Helicopter Troops (ATKHT), Three Air Cavalry Troops (ACT), and an Aviation Unit Maintenance Troop (AVUM). Figure 2-1 shows the organization of the RAS.

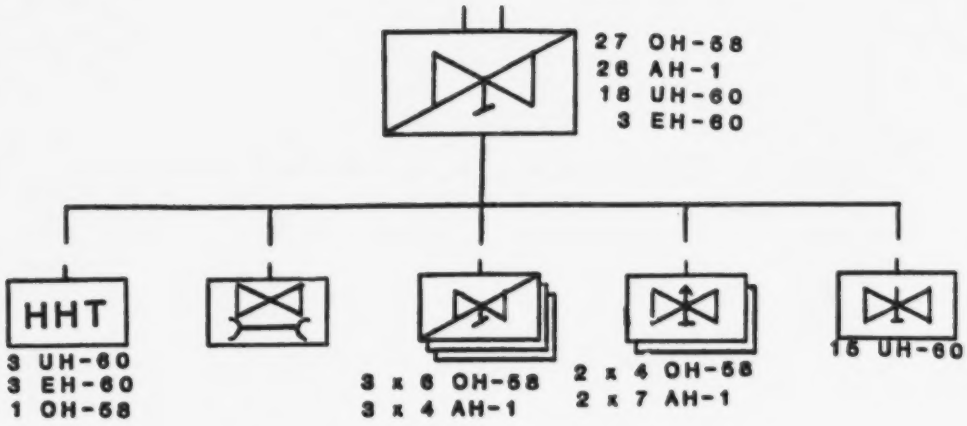


Figure 2-1

a. Headquarters and Headquarters Troop

The HHT provides command and control and staff planning for the RAS. The squadron headquarters consists of the commander and his coordinating staff. The headquarters troop is composed of a troop headquarters, a troop supply section, an automotive maintenance section, a consolidated mess section, a medical treatment squad, a Class III/V platoon, a command aviation platoon, a ministry team, and a communications platoon. A separate EW flight platoon provides the ACR's EW company with its aerial SIGNIT asset. Figure 2-2 shows the organization of the HHT.

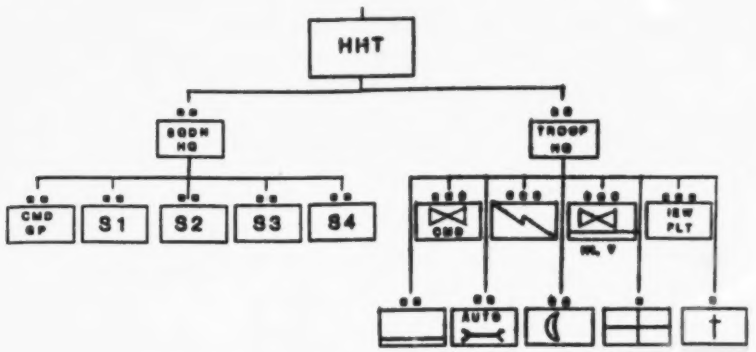


Figure 2-2

b. AVUM Troop

The AVUM Troop consists of the Troop Headquarters, a Quality Assurance Section, an Aircraft Maintenance Platoon and an Aircraft Component Repair Platoon (Figure 2-3). AVUM provides unit level maintenance for the Squadron's organic aircraft. Additional AVUM duties are discussed in Section 5.

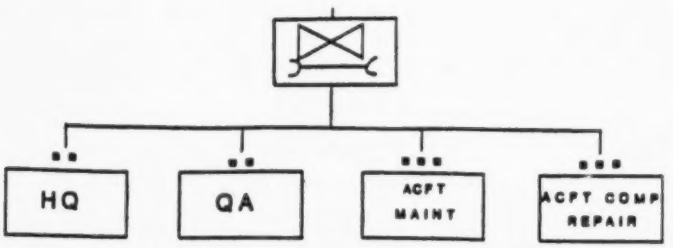


Figure 2-3

c. Assault Helicopter Troop

The AHT consists of a troop headquarters and three combat support aviation platoons. Each platoon has five UH-60s. Figure 2-4 shows the organization of the AHT.

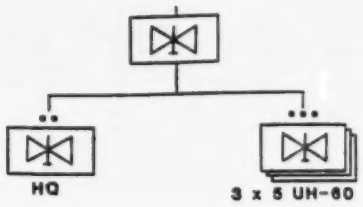


Figure 2-4, Organization of the AHT

The AHT provides the RAS with combat support and combat service support by moving troops, supplies, and equipment within the combat zone. It may conduct air assault operations with one dismounted mechanized infantry company and may augment aeromedical evacuation efforts. In addition, the AHT provides UH-60 aircraft for command, control, and liaison as required by the ACR commander. The AHT also allows the RAS commander to support his own extensive Class III/V requirements. The AHT is employed similar to the assault helicopter companies discussed in FM 1-113.

d. Attack Helicopter Troops (ATKHT).

Each ATKHT consists of a troop headquarters, an aeroscout platoon, and an attack helicopter platoon. The aeroscout platoon has four OH-58's, and the attack platoon has seven AH-1's. Figure 2-5 shows the organization of the ATKHT.

The ATKHT's are the primary anti-armor forces of the RAS. They can fix and destroy enemy penetrations, exploit success, and provide long-range direct anti-armor fires. Although the ATKHT's have fewer scouts than Air Cavalry Troops, they can perform limited reconnaissance and screening missions.

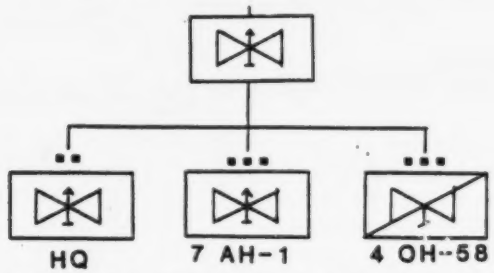


Figure 2-5, Organization of an ATKHT

e. Air Cavalry Troops (ACTs).

Each ACT consists of a troop headquarters, an aeroscout platoon, and an attack helicopter platoon. The aeroscout platoon has six OH-58s, and the attack platoon has four AH-1s. Figure 2-6 shows the organization of the ACT.

The ACTs comprise the reconnaissance elements of the RAS. They detect, identify, locate, and report enemy forces. They can cover wide frontages and add depth to the battle area. Aeroscouts can also rapidly report information about the tactical situation and provide real-time intelligence to the commander. The attack helicopters primarily provide suppressive and protective fires for the aeroscouts, thus enhancing the survivability of the entire team.

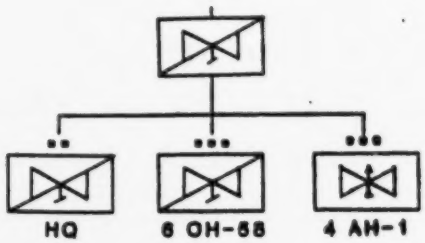


Figure 2-6, Organization of an ACT

2-2 DIVISIONAL CAVALRY SQUADRON (HEAVY DIVISION)

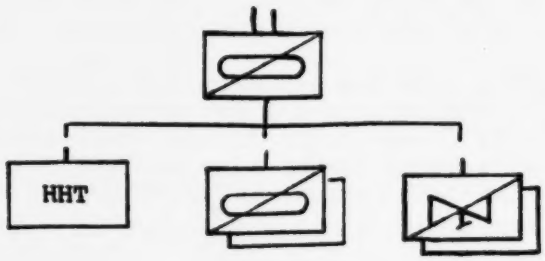


Figure 2-7, Organization of the Division Cavalry Squadron

a. Aviation assets within the Division Cavalry consists of the Aviation Unit Maintenance (AVUM) platoon and two air cavalry troops. The Air Cavalry Troops are identical in organization to the Air Cavalry Troops discussed in paragraph 2-1d.

b. The AVUM platoon consists of a platoon Headquarters, an Aviation Maintenance Section, an Aviation Component Repair Section, and an Aviation Supply Section. (See Figure 2-8). The platoon provides maintenance and supply support for the two Air Cavalry Troops. Additionally, the AVUM platoon establishes Forward Arming and Refuel Points (FARPs) in support of Air Cavalry operations.

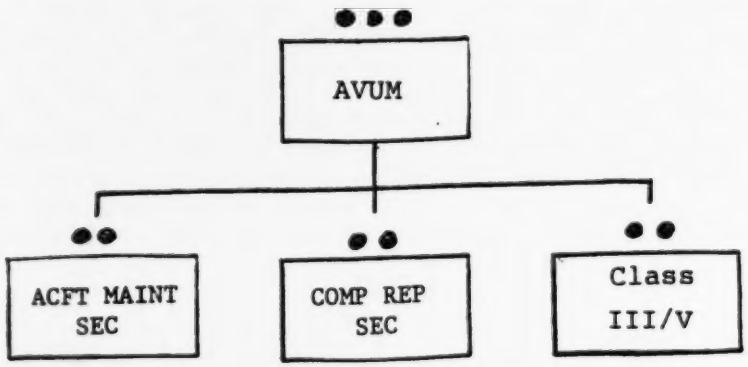


Figure 2-8, Organization of the AVUM Platoon

2-3 Air Cavalry Organic Aircraft

a. OH-58 (KIOWA)

The primary aeroscout aircraft of the Air Cavalry and Attack Helicopter Troops is the OH-58 KIOWA. Originally purchased in 1971, the OH-58 is a single engine turbine-powered helicopter. The crew consists of a pilot and an aerial observer.

OH-58 KIOWA

SPECIFICATIONS:

SEATING: 4 (2 Crew, 2 Passengers)

WEAPONS: NONE

NORMAL AIRSPEED: 0 - 90 Knots (0-180 KMH)

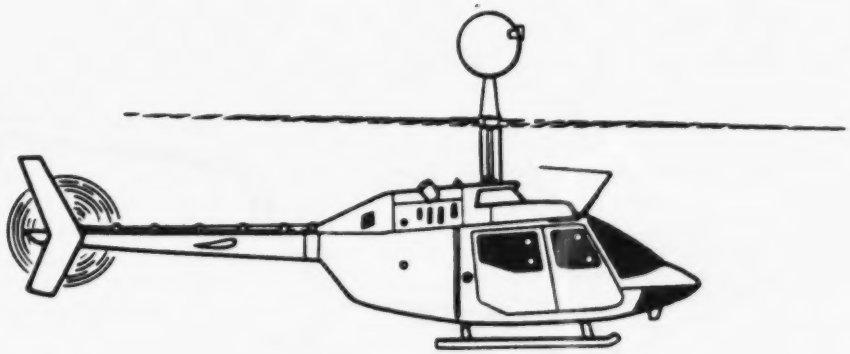
MAX AIRSPEED; 120 Knots (240 KMH)

ENDURANCE: 3 Hrs (Europe), 2 Hrs (Desert)

COMMUNICATIONS: 2 FM (1 Secure), 1 VHF, 1 UHF

b. AH-58D KIOWA WARRIOR

The AH-58D WARRIOR is a completely overhauled version of the OH-58 KIOWA. The AH-58D has an improved engine, transmission and rotor system providing increased power and maneuverability. This aircraft provides an armed reconnaissance capability as well as anti-tank fires to the Cavalry. The Mast Mounted Sight System (MMS) contains a Laser designator/Range finder, Thermal Imagery System and a low light Television Camera. The aircraft was originally purchased to provide an aerial platform to guide and adjust accurate long range artillery fires but proved its value as a reconnaissance asset. Currently the AH-58D will replace both the AH-1 and OH-58D in selected Cavalry organizations and will be fielded as a troop strength of 8 airframes.



AH-58D KIOWA WARRIOR

CREW	1 PILOT/1 CO-PILOT
WEAPONS	HELLFIRE ANTI-TANK MISSLE (UP TO 4) 2.75" AERIAL ROCKETS (UP TO 14) AIR TO AIR STINGER (ATAS, UP TO 4) 50 Cal MG
NORMAL AIRSPEED	90 Knots
ENDURANCE	2+30 Hrs
COMMUNICATIONS	2 FM (SECURE/TACFIRE), UHF, VHF, HF

COMMENT: The airframe cannot accommodate all available weapon systems at a time, METT-T will dictate what systems will be used for each tactical situation.

c. AH-1S COBRA

Procured by the Army in 1970, the AH-1 Cobra is the first rotary wing aircraft designed specifically as an attack helicopter. The AH-1s has been extensively modified to incorporate sophisticated target acquisition and fire controls such as Heads Up Display (HUD), Helmet Mounted Sighting System (HELMSS), Laser Rangefinder/Tracker and a Thermal Imaging System (Limited Quantity).

AH-1S COBRA

SPECIFICATIONS:

CREW: 1 Pilot (rear seat), 1 gunner/Co-pilot (front seat)

PASSENGERS: None

AIRSPEED: 0-150 Knots (0-172 MPH)

MAX AIRSPEED: 190 Knots (218 MPH)

ENDURANCE: 2 Hrs (Europe), 1.5Hrs (Desert)

COMMUNICATIONS: 1 FM (Secure), 1 VHF, 1 UHF

WEAPONS:		
	TOW	0-8
	2.75" Folding Fin Rockets	0-38
	20 mm	0-750 rounds

Weapons Configuration:

Based upon a number of factors, weapons configurations for the AH-1s will be modified. Major factors include temperature and density altitude which affect the amount of weapons that can be carried and METT-T determines which type of weapons will be carried.

Sample weapons configurations are depicted below. These do not represent a "school solution" but rather, show how weapons loads can be tailored based on those factors identified above.

EUROPE RECONNAISSANCE	EUROPE ANTI-TANK
2 Hrs Duration (Fuel)	1.6 Hrs Duration (Fuel)
4 TOW Missiles	8 TOW Missiles
38 2.75" Rockets	38 2.75" Rockets
750 20 mm	750 20 mm

DESERT RECONNAISSANCE	DESERT ANTI-TANK
1.3 Hrs Endurance	1.0 Hrs Endurance
4 TOW Missiles	8 TOW Missiles
38 2.75" Rockets	14 2.75" Rockets
500 20 mm	500 20 mm

d. UH-60 BLACKHAWK

Utility helicopter support within the Regimental Cavalry and the Division Cavalry is provided by the UH-60 Blackhawk. The Blackhawk provides the capability to rapidly transport troops and equipment throughout the area of operations. Primary missions include Command and Control enhancement, airmobility, aeromedevac, and within the Regiment, signal intelligence and EW support (EH-60 Quickfix).

UH-60 BLACKHAWK

PAYLOAD: 6195 lbs

NORMAL CRUISE SPEED: 145 Knots

ENDURANCE AT CRUISE: 2+30 hrs

TROOP CAPACITY: 14

LITTERS + AMBULATORY: 4/6

EXTERNAL LOAD : 8000 lbs

LANDING ZONE WIDTH: 100' X 100'

WEAPONS: M-60 (2)

COMMUNICATIONS: FM(2), UHF, VHF

COMMENTS: During combat operations seats may be removed and up to 23 troops can be carried. Aircraft may also be equipped with external fuel to increase endurance to 10 hours.

SECTION III -- FUNDAMENTALS OF EMPLOYMENT

(3) Once the troop is task organized, the troop commander must determine how to best manage his teams on station. The limited duration of aircraft necessitates frequent returns to a Forward Arming and Refuel Point (FARP). This necessitates that commanders/team leaders carefully monitor these actions to ensure sufficient combat power at the FLOT. Examples of how this might be accomplished are provided below.

Example #1 Team Rotation (3 Team Task Organization)

Given a narrow sector (6-10 km) with relatively open terrain, one team may be able to adequately cover the terrain. In this situation, teams could rotate in sector, thus, providing adequate time for refuel, rearming, limited maintenance, etc. (FIGURE 3-1).

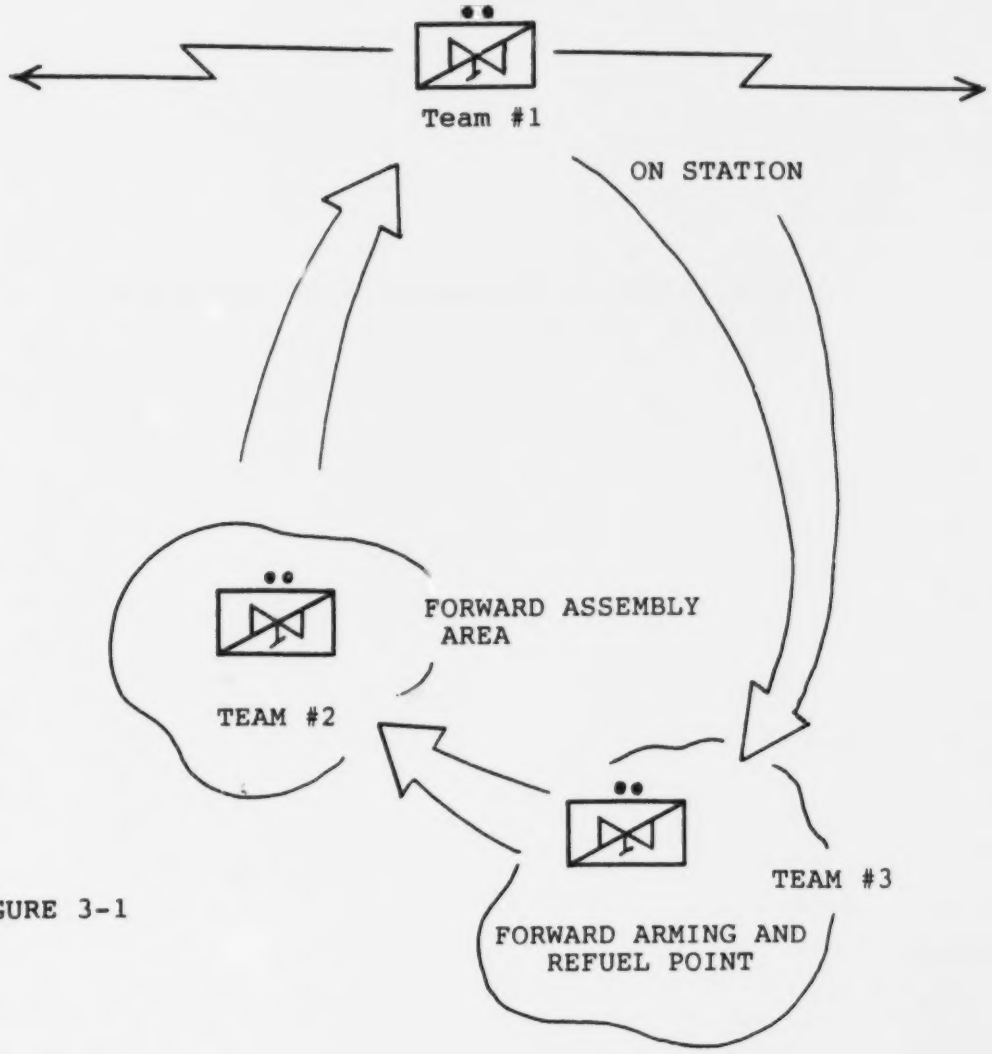
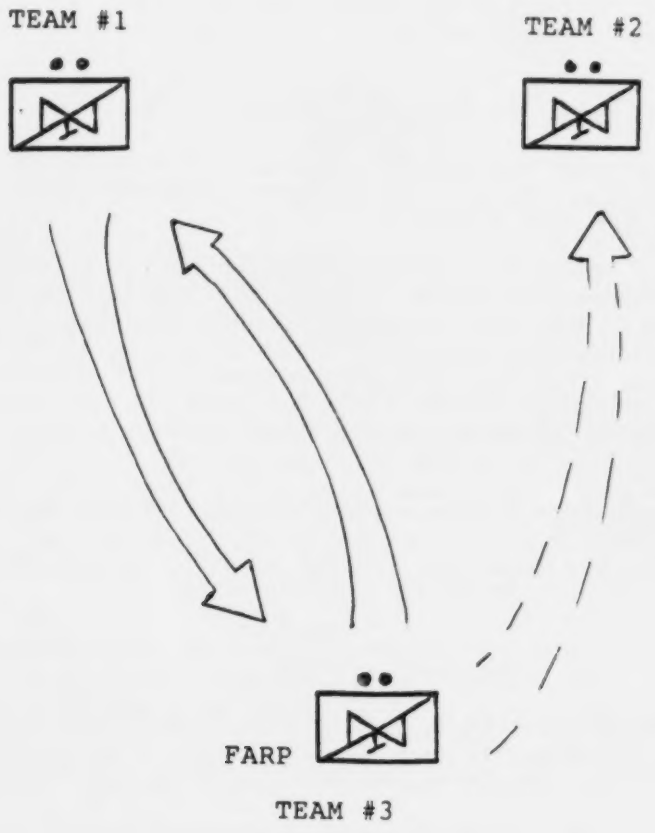


FIGURE 3-1

In a wider sector (up to 30 Km) or when more aircraft are required to cover the terrain, two teams may have to be on station at one time (See Figure 3-2). By phasing teams, a rotation can be established which allows for a minimum of two teams on station at all times.



At H+1 TM #1 is relieved ON STATION by TM #3.

At H+2 TM #2 is relieved ON STATION by TM #1.

Teams are phased in and out of sector using this rotation for the duration of the mission.

3-1 ORGANIZATION FOR COMBAT

a. Air Cavalry Troops and Attack Helicopter Troops are organized into pure platoons of either Aeroscouts (OH-58) or Aeroweapons (AH-1). This organization enhances the day-to-day maintenance and individual training tasks for aircrews and maintenance personnel. In combat, however, the troop commander task organizes his assets based upon the factors of METT-T. The ability to task organize internally allows the troop commander to tailor his organization to fit specific missions on a given battlefield. Normally at least two aircraft will operate in sector, providing mutual support and overwatch.

b. Air Cavalry Task Organization

(1) The two basic elements of the Air Cavalry, the "Scouts" and the "Guns" are grouped together in such a way to best accomplish the mission.

(2) From his assigned strength of 6 OH-58s and 4 AH-1s, the commander first determines the operational readiness of the troop. For the purpose of this example, assume that 5 OH-58s are available and that 3 AH-1s are available. Normally, the commander will fly 80% of his available aircraft for a given mission in order to allow time for routine maintenance. Thus, 4 OH-58s and 2 AH-1s will be used for this mission.

(a) These assets could then be task organized as follows:

Team #1 - 1 OH, 1 AH Team #2 - 1 OH, 1 AH

Team #3 - 2 OH

NOTE: Given this task organization, the Troop commander would act as team leader for one of the three teams. The two platoon leaders will be the team leaders for the remaining teams.

(b) Another way to task organize these assets could be as follows:

Team #1 - 2 OH, 1 AH Team #2 - 1 OH, 1 AH

Troop Commander - 1 OH

NOTE: This task organization allows the troop commander more flexibility throughout the operation than does the first. However, for extended operations it might be more difficult to sustain.

Example #2 AIRCRAFT ROTATION

Rather than rotating entire teams in and out of sector the commander may direct that team leaders manage their own rotation within the team. In the case of Team #2, the Troop Commander would relieve one aircraft on station to allow a return to the FARP while maintaining two scouts in sector (Figure 3-3).

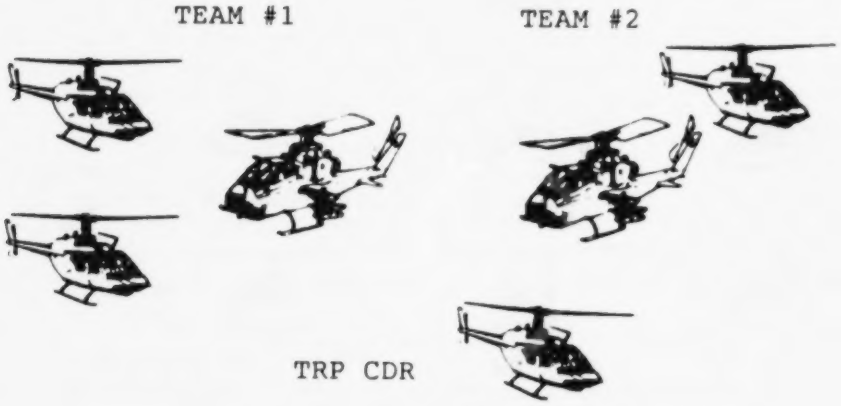


Figure 3-3

When overwatch by one of the guns is desirable, Team Leaders must carefully monitor the operation, and plan on having those assets rotate at the least critical time (i.e. when terrain or enemy situation is not suitable for attack helicopter capabilities). In the absence of AH-1s, direct and indirect fires from ground cavalry units should be made available to the aeroscout.

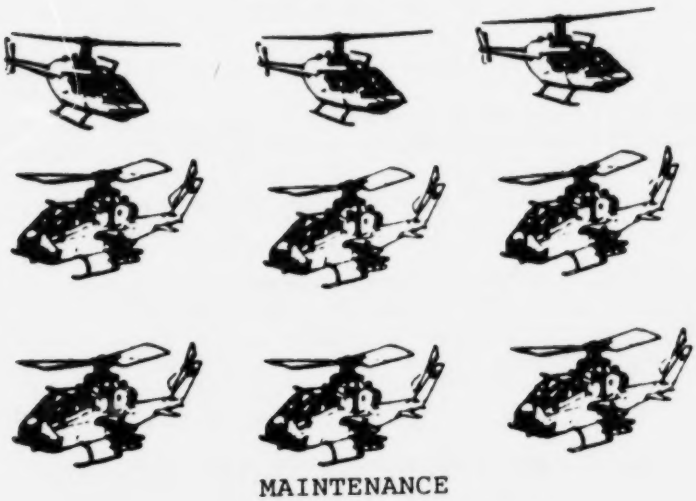
(4) Within the Division Cavalry Squadron, the CDR may find it desirable to task organize his two air troops in order to provide the capability to rapidly mass firepower at any given point on the battlefield. In this instance, the two troops within the squadron could be task organized into a provisional "Attack Troop" and "Recon Troop" (Figure 3-4).

(a) This task organization provides the capability to provide maximum reconnaissance power forward for extended durations while at the same time providing the ability to react rapidly with massed anti-armor firepower. This would be most appropriate in either a security role or during a movement to contact.

(b) When task organized in this manner the "Recon Troop" should operate within the range of ground cavalry direct and indirect fire weapon systems.

RECON TROOP

ATTACK TROOP



MAINTENANCE

Figure 3-4

c. Attack Helicopter Task Organization

(1) The Regimental Cavalry's two attack helicopter Troops normally operate as depicted below. The Air Mission Commander (AMC) is responsible for ensuring that the troop's actions support the ground commander's scheme of maneuver and that indirect fires are planned to support the troop. When attack helicopters and artillery are joined with close air support to form a Joint Air Attack Team (JAAT), the Air Mission Commander is responsible for orchestrating the actions of all team members.

(2) The remainder of the attack helicopter troop is divided into a light team and a heavy team. Within each team, the aeroscout identifies enemy targets, locates initial and subsequent firing positions for the attack helicopters, directs attack helicopters into the fight and calls for and adjust indirect artillery fires in support of the team fight.

(3) The two troops may be employed in rotation (continuous employment) or massed (max destruction) to achieve maximum combat power for limited durations.

Figure 3-5

3-2 Employment Considerations

a. Commanders and staff planners must understand the characteristics of organic weapon systems and how these systems maneuver. Additionally, they must recognize the best capabilities of a given system in terms of METT-T and strive to employ that system on the battlefield at a time and place that provides an opportunity to capitalize on those best capabilities. This is the essence of Airland Battle. No single system is perfect in all types of weather/terrain against all types of enemy.

b. The following employment considerations provide the commander/staff planner with the general guidelines to use in determining the best employment for air cavalry and attack helicopter assets:

- Speed + Maneuverability = Flexibility
- Optimum Employment
- Command Relationship
- Integration with Ground Maneuver
- Integration with supporting fires
- Employment Timing

(1) Speed + Maneuverability = Flexibility. The Armor battlefield is characterized by rapid maneuver. Commanders must be able to rapidly mass forces, finish a fight quickly and disperse just as rapidly. Given that the threat may attain numerical superiority, our ability to concentrate forces at one point on the battlefield hinges on our willingness to accept risk elsewhere.

(a) The degree of risk we must accept can be minimized by:

(1) The ability to see the battlefield in depth

(2) The ability to maintain effective communications

(3) A responsive and highly maneuverable anti-armor forces.

(b) Air Cavalry and attack helicopters provide the means to accomplish these ends; Air Cav to see the battlefield and provide real time information to the commander, Air Cav to enhance C2 throughout the area of operation and attack helicopters and Air Cav working together to respond to armor threats in sector.

(c) In short, the addition of aerial maneuver provides a high degree of flexibility to the maneuver commander.

(2) Optimum Employment. The nature of the aircraft itself, and its weapons systems dictate that several factors be considered when determining when and where Air Cavalry and attack helicopters can best be employed. These can best be examined with consideration of the factors of METT-T.

(a) Mission - The attack helicopter is an offensive weapon system. Although capable of dominating terrain for a period of time, it cannot defend.

(1) The attack helicopter troop can:
- Destroy Threat Armor and Mechanized Forces
- Attack or Contain Bypassed Enemy Forces
- Provide a Base of Fire for Assaulting Forces
- Dominate Key Terrain
- Attack Withdrawing/Reinforcing enemy forces
- Destroy or Repel enemy Counter-Attacks
- Exploitation in the Enemy Rear Area
- Participate in Pursuit Operations
- Participate in Raids

(2) The Air Cavalry because of its limited number of weapons systems, is best employed in the reconnaissance role or in a limited security role such as a screen.

(b) Enemy - Any Aerial platform provides a limited ability to detect small stationary forces. An aeroscout would have great difficulty in detecting an enemy OP or an established platoon defensive position. Likewise, an attack helicopter troop attacking an MRC in a prepared defense would take unacceptable losses because it could not acquire targets at the range necessary to survive enemy medium MG fire. Thus the best employment of aviation assets will be achieved against moving enemy forces in relatively open terrain.

(c) Terrain and Weather - Exposed to small arms and machine-gun fire in close terrain, the helicopter will not survive. Additionally, the nature of the primary weapon system (TOW) is best suited to anti-armor engagements at extended ranges. Although training and improvements in the equipment have greatly improved the ability of the attack helicopter to fight at night or in adverse weather, the TOW cannot track through heavy fog, smoke, haze, etc. Additionally, our ability to fight at night is limited by what can be acquired using night vision goggles.

On a clear night targets can be detected at extended ranges. However, smoke, haze, dust, etc., can greatly degrade the capabilities of the goggles.

(d) Troops and Equipment Available - The relatively high cost of obtaining and maintaining aircraft, the cost of training aircrews and maintenance personnel and the costs of fuel and ammunition preclude fielding aviation systems in large numbers. The total number of AH-1s assets in the Regiment is 26. These high value assets must be employed with an eye on achieving the highest payoff.

(e) Time and Space - As discussed in paragraph 3-2b(1), the major contribution which the helicopter makes on the heavy battlefield is the speed with which aerial assets can maneuver. This will be discussed in detail later in the text.

(3) Command Relationship - The support system for ground maneuver squadrons is not structured to handle the extensive logistical requirements of aviation units. Thus, aviation units must be able to take care of their own requirements. Therefore, when aviation units operate outside o their parent organization, they are placed under the Operationa Control (OPCON) of the maneuver commander. The OPCON relationship, simply stated, requires that orders be issued by the maneuver commander but that the OPCON unit is supported fro its parent organization. Thus, an Air Cavalry Troop placed OPCON to an Armored Cavalry Squadron would receive its support from the Regimental Aviation Squadron but would receive orders from the ground squadron commander.

(4) Integration with Ground Maneuver - Air Cavalry and attack helicopters must be fully integrated into the ground scheme of maneuver both during the planning and execution of an operation. This is true regardless of who "owns" the aviation assets. Effective integration depends upon:

(a) Mutual understanding of the other guy's mission, tactics, capabilities, limitations, etc..

(b) Common SOPs which enhance the ability to communicate rapidly and effectively between air and ground maneuver commanders.

(c) Continuous and effective liaison between commanders/staff of air and ground units.

(d) Inclusion of aviation maneuver in plans, orders, etc., and the inclusion of aviation personnel in orders groups.

(5) Integration With Fire Support - As a part of the coordination process discussed above, plans were also developed for the employment of indirect fires and CAS with aerial maneuver. Although the Aviation Squadron has no organic fire support, its FSE can coordinate the use of fires with the ground maneuver forces and plan for the suppression of enemy air defenses (SEAD) during JAAT operations. Additionally, he develops a Fire Plan for the employment of indirect fires and CAS available to the Regiment.

(6) Employment Timing - Although highly effective for limited periods of time, Air Cavalry and attack helicopters have limited staying power. Two hours after take-off (AH-1 Europe) the aircraft must return for fuel regardless of ammunition status.

(a) An aircraft in an ambush position waiting for something to happen is burning fuel. Unlike armor and mech infantry, attack helicopters cannot occupy battlepositions hours before the expected battle.

(b) Having attack helicopters arrive too late is equally unacceptable. A commander who must hold terrain who waits until the enemy is within main gun range to position his attack helicopters has already waited too long.

(c) Two factors determine success in the timing of the attack helicopter employment. The first of these is the knowledge of how much time is required to move the attack troop from a Forward Assembly Area to a Holing Area (HA) and finally to it's Battle Positions. Secondly, and most difficult, is the ability to see the battle, not how it appears now, but how it will appear 15 or 20 minutes from now.

(d) As discussed above, a part of this process requires identifying places and times on the battlefield where attack helicopters will be most effective. As these are identified, preparations are made to reduce response time and turn-around times to a minimum. These preparations include the establishment of Forward Assembly Areas, Forward Arming and Refuel Points and the development of combat plans to best integrate the aerial maneuver into the ground scheme of maneuver. The presence of an Liaison Officer in the maneuver TOC greatly contributes to the ATKHTs ability to anticipate requirements and respond rapidly.

EXAMPLE:

The ACR has been assigned a covering force mission forward of the Corps. The Regimental Commander has been told he must hold the enemy forward of PL Blanket for at least 48 hours. Th Squadrons are currently occupying initial delay positions alon PL Boot with Air Cavalry screening forward of the Regiment. Initially, the Attack Helicopter Troops constitute the anti-armor reserve for the regiment.

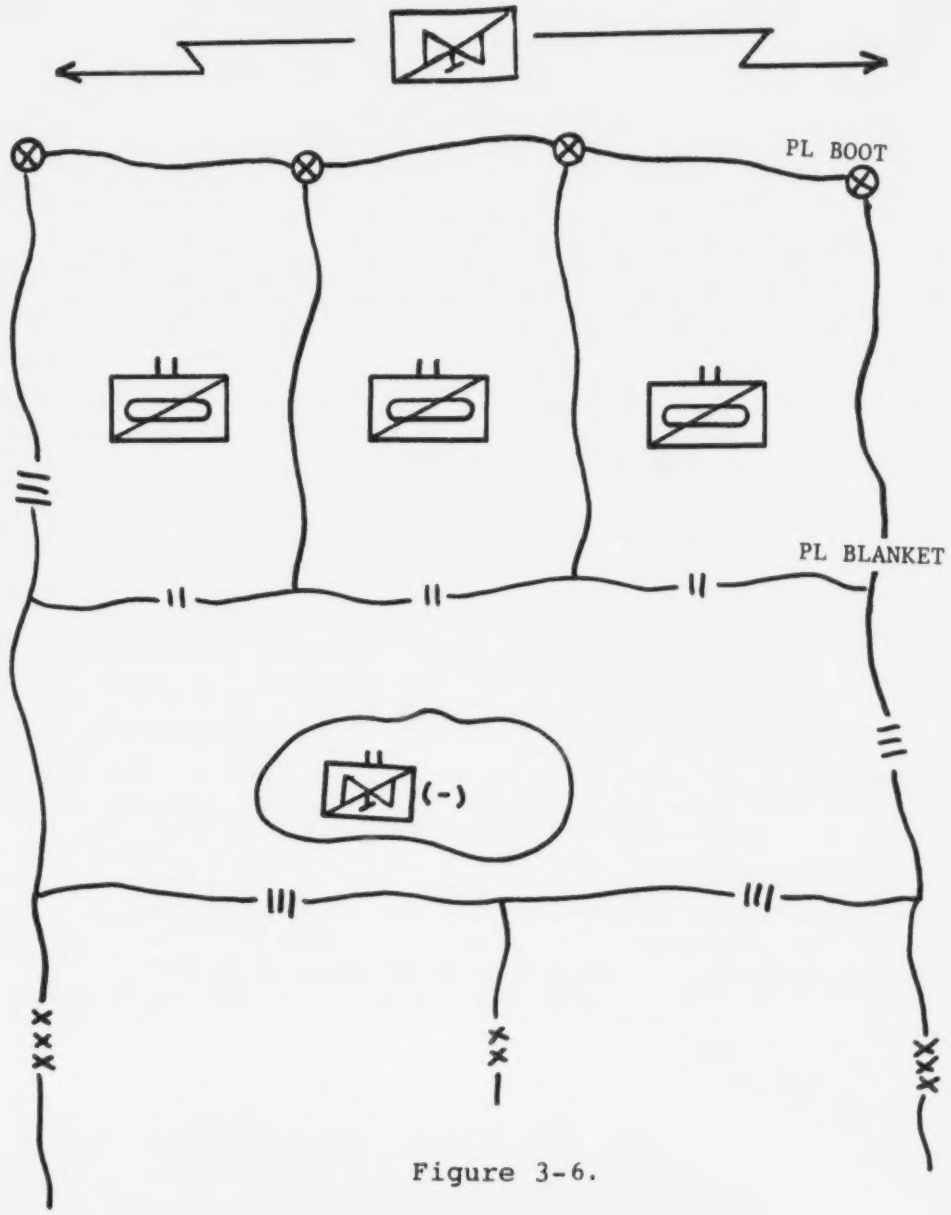


Figure 3-6.

Upon receipt of the covering force mission, the Aviation Squadron Commander directed his Air Cavalry Troops to make initial coordination with the ground squadrons with each Air Troop having responsibility for one of the ground squadron sectors. Thus, liaison was effected with all of the maneuver forces in sector.

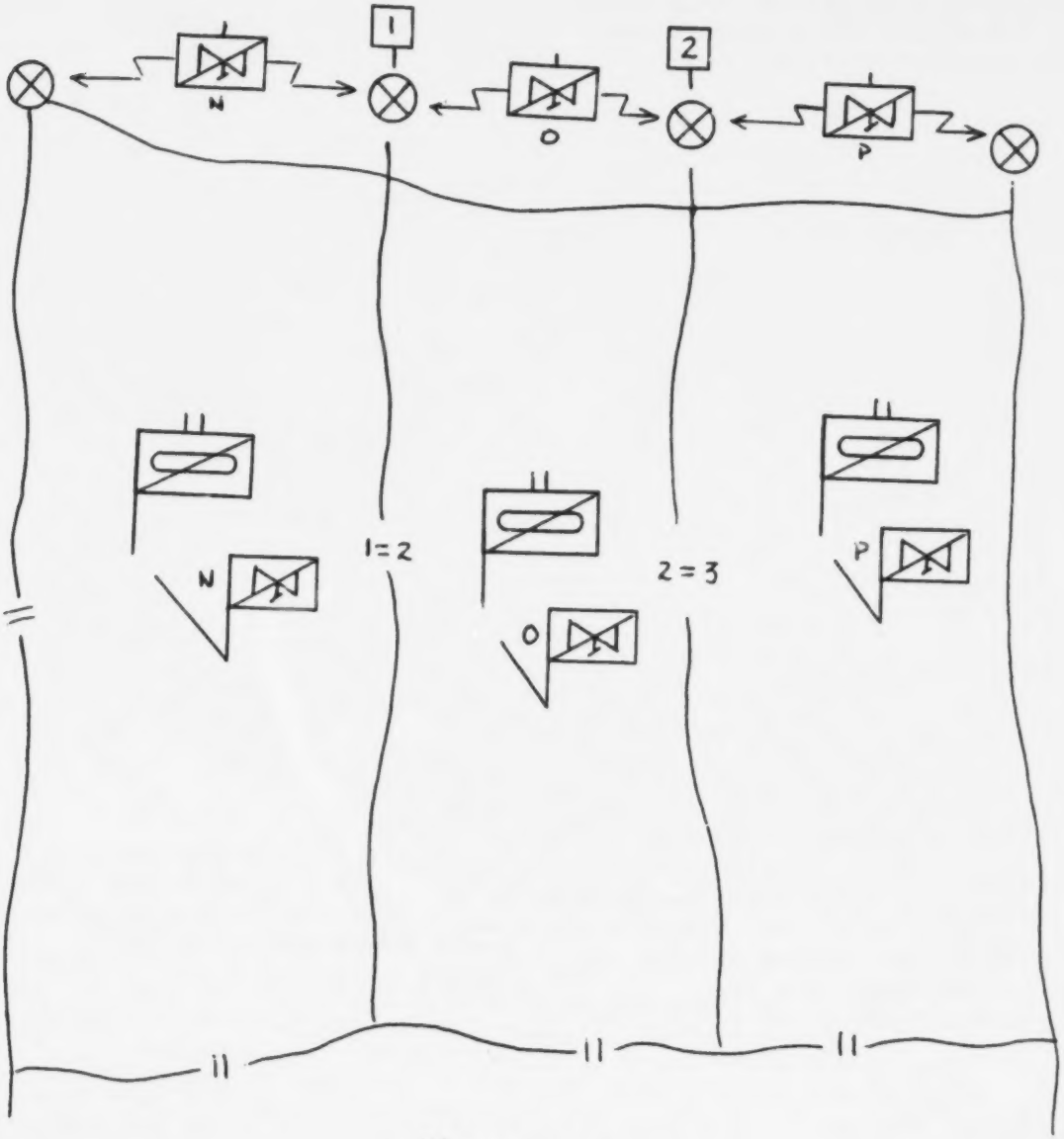


Figure 3-7.

The Regimental sector has four major enemy Avenues of Approach (AA); AA1 supports a MRR, AA2 supports a MRR or TR, AA3 and AA4 both support a MRR in column. The Regimental Commander expects the main attack along AAs 1+2. The majority of the Regiments combat power is oriented along those AAs. If, however, a major attack develops along AAs 3+4, sufficient combat power must be able to reinforce 3rd Squadron quickly. Because an air cavalry screen will identify movement on these AAs early and the Attack helicopter troops (ATKHTs) can react rapidly into the 3rd Squadron sector, the commander can afford to concentrate forces at what he considers the critical AAs.

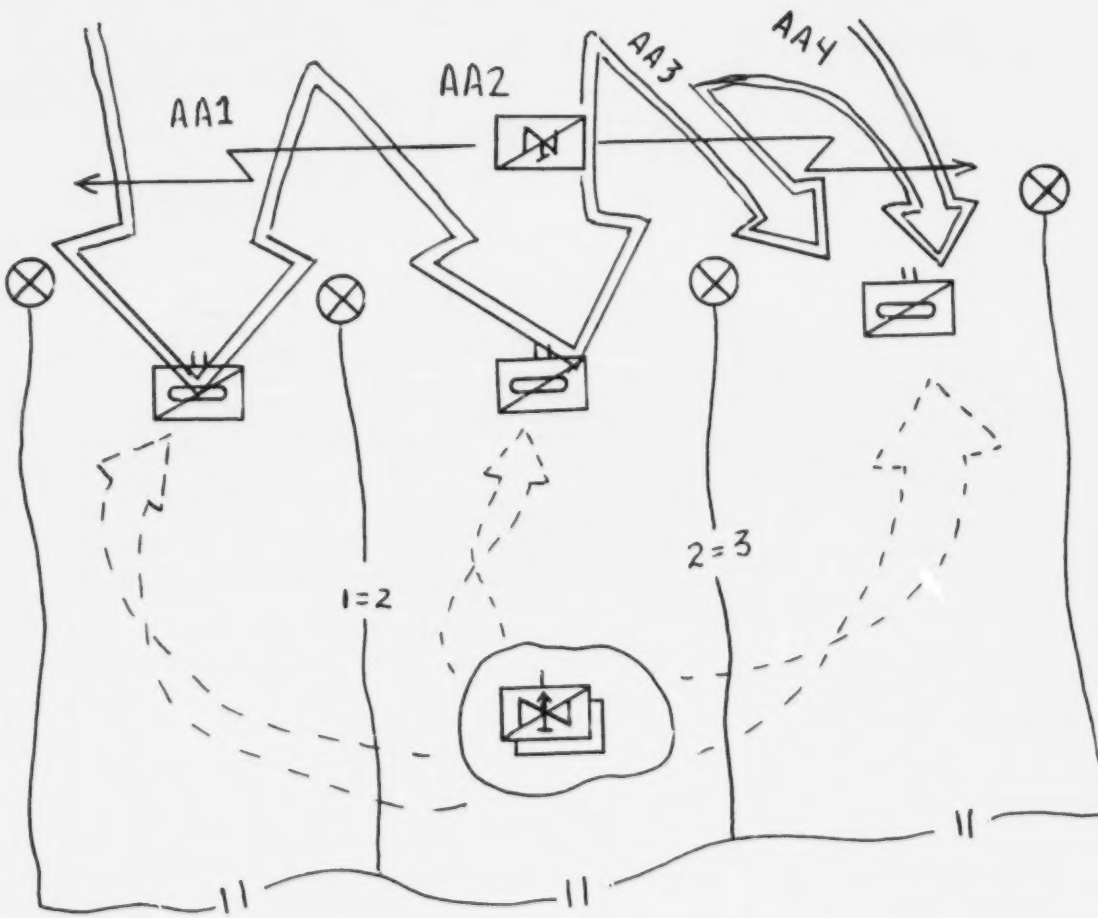


Figure 3-8.

At the same time, the Aviation Squadron staff, working closely with the Regimental staff, refined guidance and prioritized missions within the Regiments area of operation for the employment of the attack helicopters.

Given the guidance from the Regimental staff and provided with detailed plans from the three ground squadrons, the Aviation Squadron could better prepare for integration into the fight.

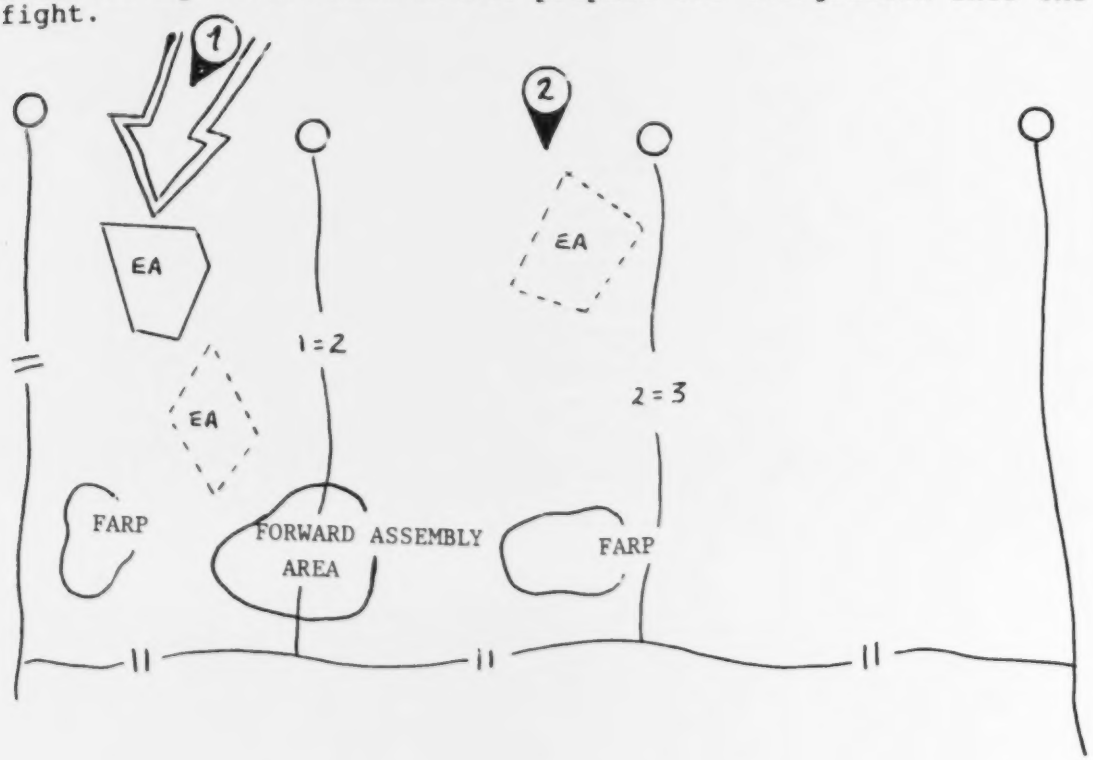


Figure 3-9.

Because the main attack was expected into the 1st Squadron sector, coordination was made to move the ATKHTs into that squadron's sector as intelligence developed. Decision Points were identified that would trigger the move. Logistics were pre-positioned forward to support the ACTs and the expected fight in the 1st Squadron Sector. Engagement Areas (EAs) that would allow integration of air and ground fires against lucrative targets were identified and plans were refined to allow air assets to rapidly move into the battle. A liaison officer from the Aviation Squadron was positioned in the 1st Squadron TOC to allow him to follow the battle as it happened and to assist in coordinating joint operations.

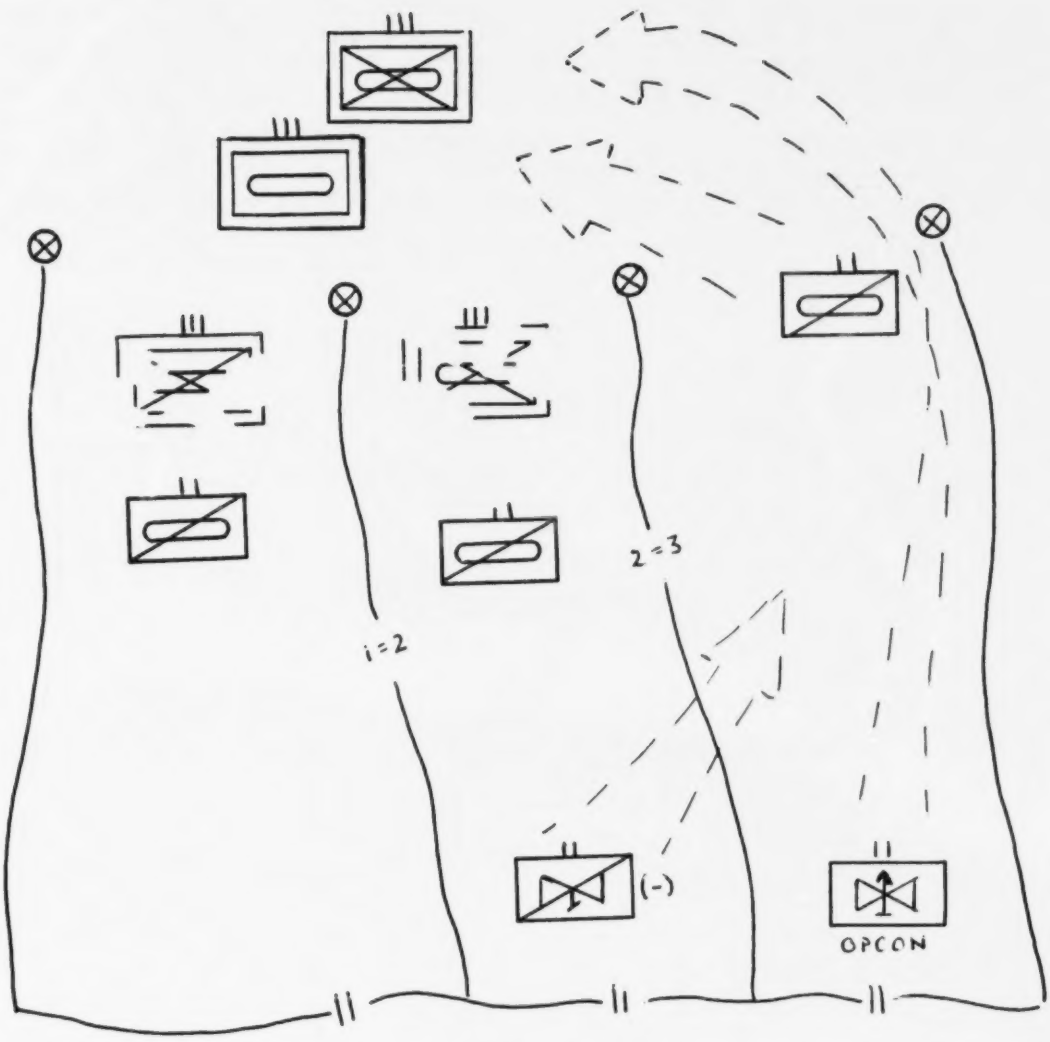


Figure 3-10.

As the battle develops, the enemy in contact has exposed it's flank to the Regiment and is vulnerable to counterattack. The Regimental Commander elects to attack to destroy the enemy tank regiment with his 3rd Squadron and an attack helicopter battalion from Corps. The Aviation Squadron will assume 3rd Squadrons mission in sector temporarily as an economy of force. This provides the necessary time to realign 1st and 2nd Squadron forces to cover the sector. Thus, the flexibility of maneuver provided by the Aviation Squadron has provided the opportunity to wrest the initiative from the enemy early in the fight.

SECTION IV

AIR CAVALRY OPERATIONS

4-1 Air Cavalry Troop Reconnaissance

a. The primary mission of the Air Cavalry is to conduct route, zone, and area reconnaissance. Although capable of conducting any of these missions independently, reconnaissance is most effective when the capabilities of air and ground cavalry are combined.

b. Air Cavalry assets are best suited to conducting genera reconnaissance. Although it is difficult for an aeroscout to provide as much detail as his ground cavalry counterpart, the aeroscout's mobility allows him to cover a considerable amount of terrain quickly.

c. Conversely, ground cavalry provides to the commander a significant amount of detail concerning the assigned reconnaissance objective. Because of the time required to develop detailed reconnaissance and because ground maneuver is more restrictive, ground cavalry will be able to cover much les terrain.

d. By pairing the air and ground assets, commanders capitalize on the best capabilities of each. Thus reconnaissance can be accomplished rapidly over a large area while at the same time providing the necessary detail concerni critical areas.

e. The following example illustrates how the pairing of a and ground cavalry enhances our ability to conduct reconnaissance.

(1) The Division Commander must move a brigade into a blocking position to counter a major enemy thrust to the division flank. Two routes have been identified which may support the force. However, the extent of damage to the routes by sabotage, artillery, engineer efforts, etc. is unknown. Rapid movement of the Brigade is essential. The Division Cavalry Squadron has been assigned the mission of conducting a reconnaissance forward of the brigade. 2-22 Cav must begin it recon NLT 0700; the SP for 3rd Brigade is 0830. (Figure 4-1)

Figure 4-1

2. Based upon the mission and the terrain, the Squadron Commander assigns responsibility for the reconnaissance to his two ground cavalry troops. His air troops are placed under the operational control of the ground troops to assist in the reconnaissance effort (Figure 4-2).

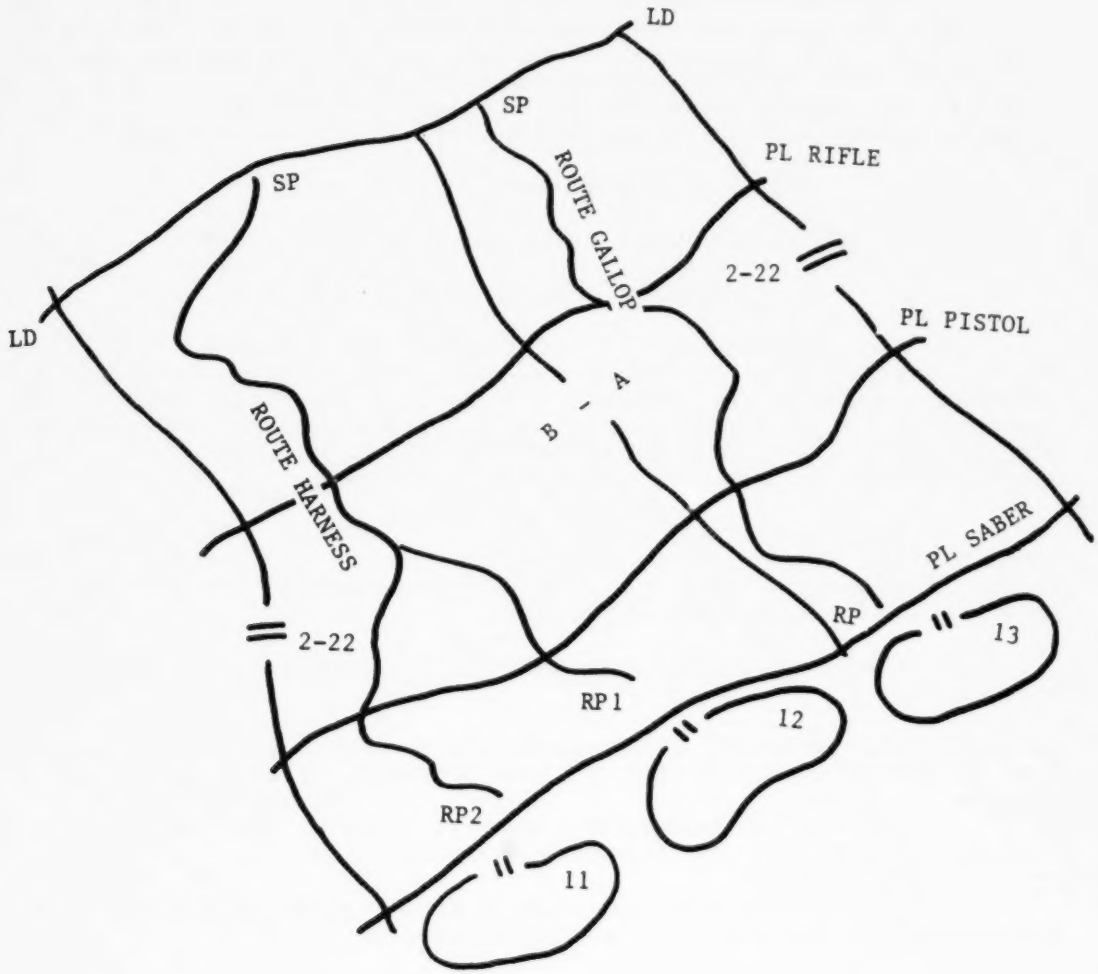


Figure 4-2

3. For purposes of this example, we will concentrate on how th A Troop Commander plans and executes the operation.

a. C Troop has been placed OPCON to A Troop. However, within the Division Cavalry this OPCON relationship has a clear and distinct meaning. It establishes three requirements that are to be met by the OPCON and supported commander.

(1) Requirement 1: Joint Planning - The OPCON relationship requires that the operation be planned by both commanders. The supported commander determines the scheme of maneuver. The OPCON commander advises on how his troop can bes support the scheme of maneuver. This interaction between commanders develops a final plan which outlines:

(a) Individual troop tasks.

(b) Concept for mutual support.

(c) Concept for actions on contact.

(2) Requirement 2: Commander to Commander Communication - In the OPCON relationship, the supported commander directs the operation solely through the OPCON Commander. Subordinate platoons of each troop are controlled b their respective commanders. Therefore, clear, concise communication is required between commanders.

(3) Requirement 3: Unity of Command - Upon enemy contact, the supported commander decides on the course of actio to be taken in the sector. The OPCON commander advises on capabilities and supports the decision.

b. Other considerations in Division Cavalry air/ground operations:

(1) Armored troop commanders always plan to recover downed aircrews and assist in the recovery of aircraft.

(2) Troop commanders always plan to provide overwatching fires for scout helicopters.

(3) Air Troop commanders always plan to support the disengagement of armored cavalry elements.

(4) The armored troop CP receives reports from both troops and is responsible for passing the reports to the squadron.

(5) The armored troop FSO works for both troops and may be located with either depending primarily on the enemy situation.

(6) The armored troop 1SG is prepared to assist FARP operations if positioned in sector.

4. Within the requirement of joint planning, the two troop commanders decide that A Troop will concentrate it's efforts on ROUTE GALLOP while C Troop conducts a reconnaissance of the adjacent terrain and lateral routes. The aeroscout elements will lead initially and advise the A troop commander of possible problem areas along the route.

5. The areoscout element will consist of two teams of 2 OH-58 aircraft with the Troop Commander operating from another OH-58. As the area is relatively secure, the troop's AH-1s will be held as a reaction force. As the reconnaissance begins, the troops are deployed as shown in Figure 4-3.

Figure 4-3

6. As the reconnaissance progresses, TM #1/C Trp identifies that the built up area received major damage as a result of artillery fire and that engineer work will be required to clear the route. TM #2/C Trp reports a secondary route around the perimeter of the town does appear usable. Additionally, cross-country mobility to the south of town appears to be good.

7. TM #1/C Trp reports both the bridge to the north of town and the bridge on ROUTE GALLOP to be destroyed. The abutments have been blown and an AVLB cannot span. TM #2/C Trp reports the bridge south of town is intact but estimates the weight class to be no more than 40 Tons. He estimates that the bridge could be spanned by an AVLB.

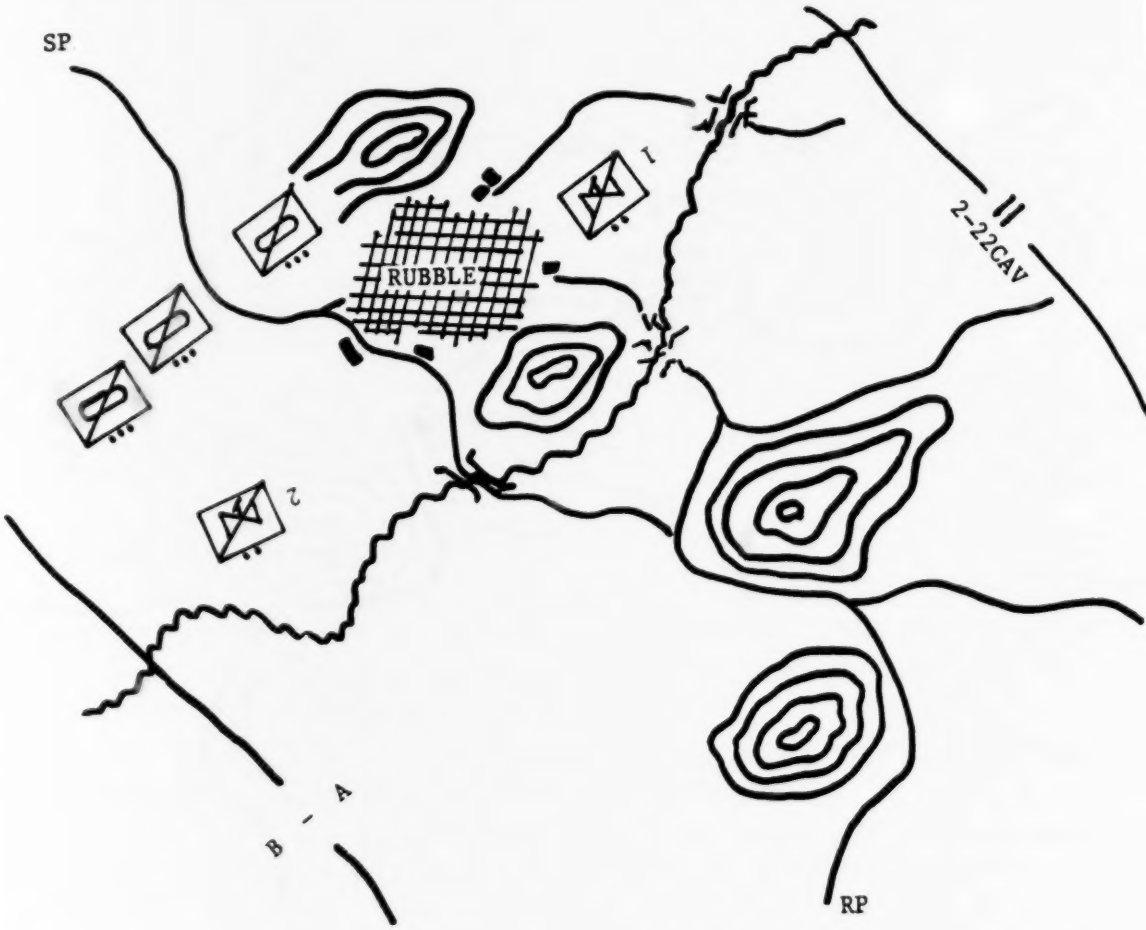


Figure 4-4

8. Upon receipt of the information in Paragraphs 6 and 7, the commander directs TM #1/C Trp to search for possible FORD sites to the north of town. The majority of his efforts will be to classify the secondary road and bridge to the south of town.

9. Two possible FORD sites are identified by TM #2/C Trp, and the A Trp CDR directs his elements to move forward to classify the existing bridge site and FORD sites to determine their suitability for the Brigade's movement. TM #1/C Trp has made contact with an enemy recon patrol moving along the route.

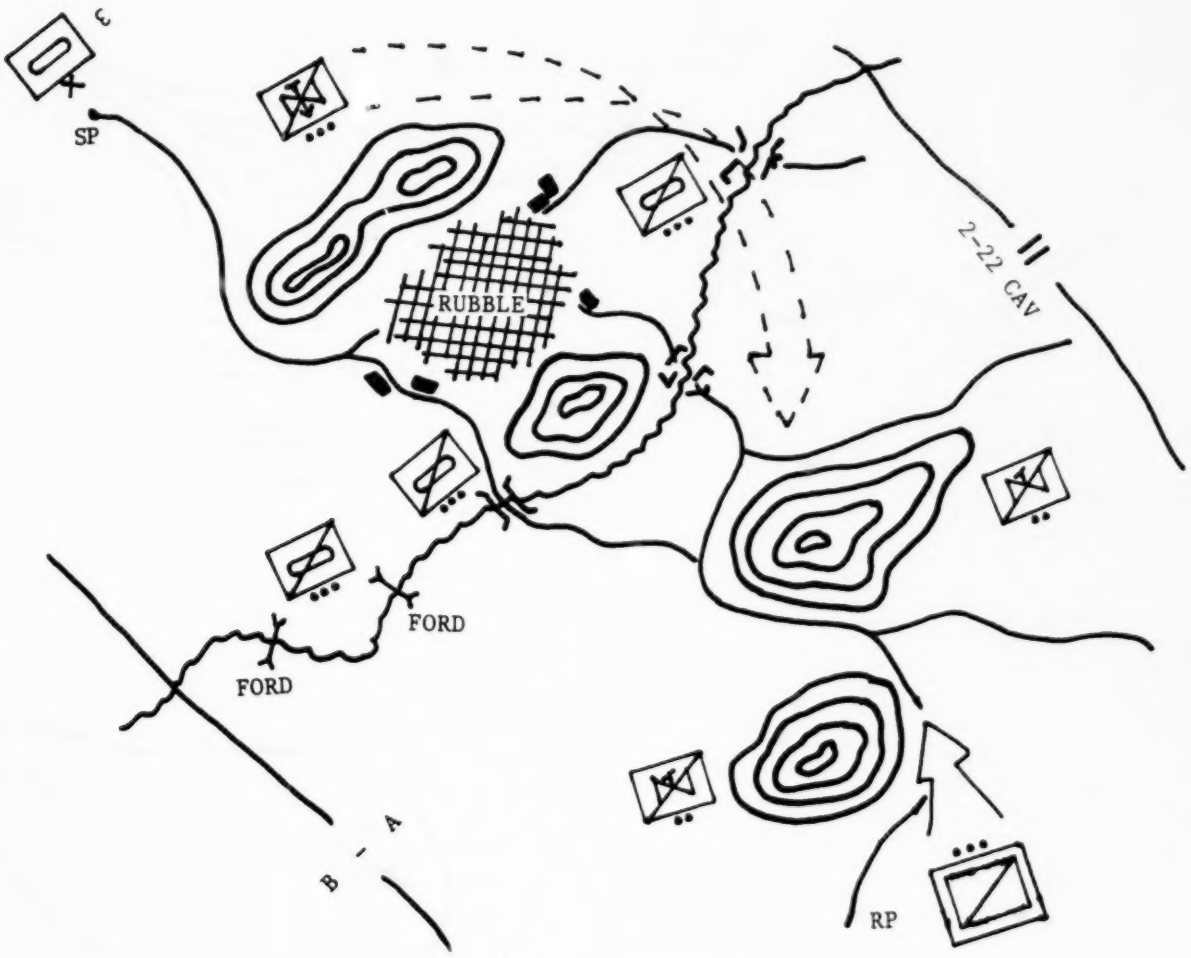


Figure 4-5.

a. TM #2 begins engaging the enemy patrol with indirect fires and the aeroweapons platoon is directed to move to a position that will allow it to engage the patrol with direct fires. TM #2 maintains visual contact with the patrol and hands over the target to the AH-1s upon their arrival. This information is transmitted to the squadron commander as the situation develops.

b. Squadron notifies it's troops to be prepared to continue to recon to the southeast or be prepared to provide security forces forward of the brigade battle positions until they arrive and are set.

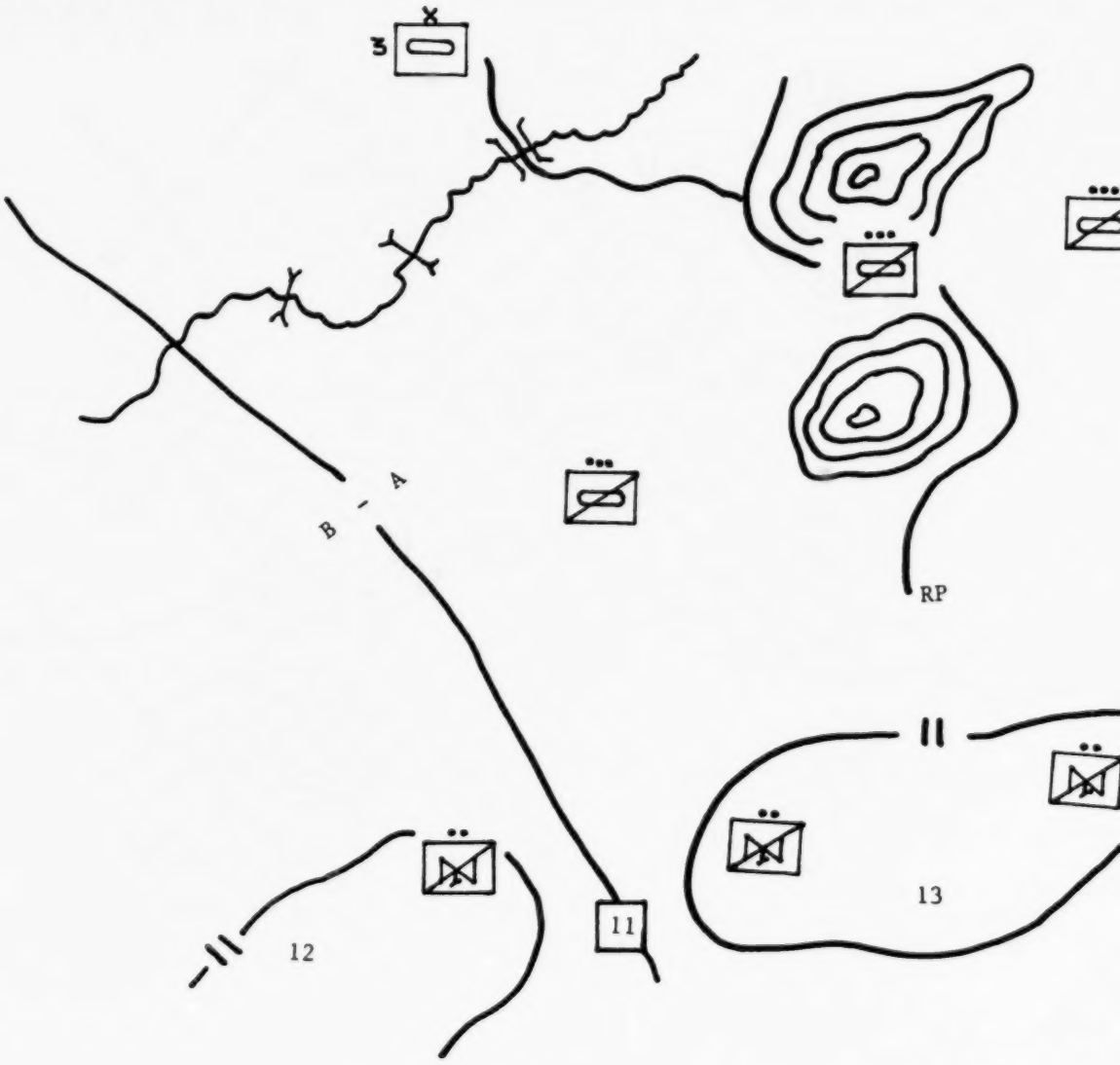


Figure 4-6.

10. Based on the information provided by the Cav, the 3rd Brigade is able to reroute it's forces to utilize the bypass and ford sites to the south with no loss of momentum and the force arrives at BP 12 and establishes an effective defense before the arrival of significant enemy forces.

4-2 AIR CAVALRY SECURITY OPERATIONS: Fighting units must be protected and preserved until they are committed at a point of our choosing. Security forces protect main body forces from enemy observation and surprise attacks allowing the main body commander to concentrate his forces at the place and time he chooses.

a. The three types of security missions are screen, guard and cover. The screen provides early warning of enemy approach and prevents enemy reconnaissance elements from gaining visual contact of the main body. The guard force, in addition to providing early warning, prevents enemy forces from coming within direct fire range of the protected unit (main body) as i performs other missions or tasks. The covering force mission i performed by the Regiment and will be discussed later in the text.

b. Air Cavalry participates in all three types of security by augmenting the surveillance capabilities and firepower of th squadron/regiment. The ability of the Air Cavalry to cover extensive amounts of terrain and to move rapidly greatly enhances the ability of the squadron/regiment to cover wide sectors effectively and provide better protection for the main body.

c. Air Cavalry Troop Screen - At times it may be necessary for an Air Cavalry Troop or a Ground Cavalry Troop to be assigned a screening force mission as an independent force. However, as in reconnaissance, the force will be far more effective when air and ground capabilities are combined.

d. A screening force is used when:

(1) An area is not considered critical enough to meri a larger force.

(2) The commander requires only early warning.

(3) Sufficient troops are not available to cover the entire sector.

e. The screening force may be required to screen a stationary or moving force. The screen may be conducted to the front, flanks, or rear of the main body.

NOTE: Security forward of a moving force will consist of a zon reconnaissance or movement to contact. Thus, an advance screen mission would not be assigned.

f. The following example of a Division Cavalry Squadron conducting a flank screen of a moving force serves to demonstrate how the air and ground cavalry work together to accomplish the mission.

EXAMPLE:

1. The Division Commander has assigned the cavalry squadron to screen the right flank of a brigade attack to seize OBJ Main. The Cavalry Commander has been given an operations overlay (Fig 4-7) which shows the following required information:

   a. The screening force (2-22 Cav)

   b. A general trace of the screen line.

   c. The force to be screened (main body)

2. The commander may also assign a Limit of Advance (PL STOP). If not assigned by the Division Commander, this should be assigned by the squadron commander. Last, the Division Commander must either grant or deny permission for the squadron to break contact with the line of departure (LD). This will determine how much terrain the squadron must cover. For this example, the squadron must maintain contact with the LD.

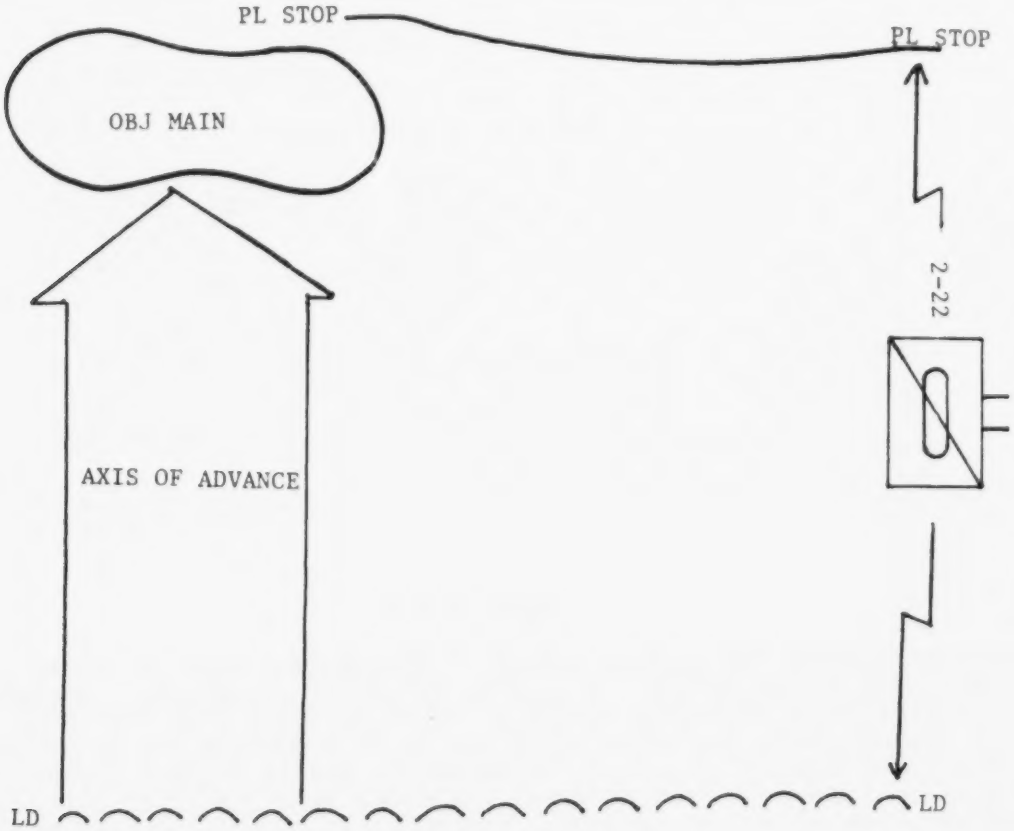


Figure 4-7

3. Upon receipt of the mission, the Squadron Commander studie the factors of METT-T and allocates space and assigns responsibilities for the sectors. Figure 4-8 depicts the Squadron overlay for the first phase of the mission - deployment.

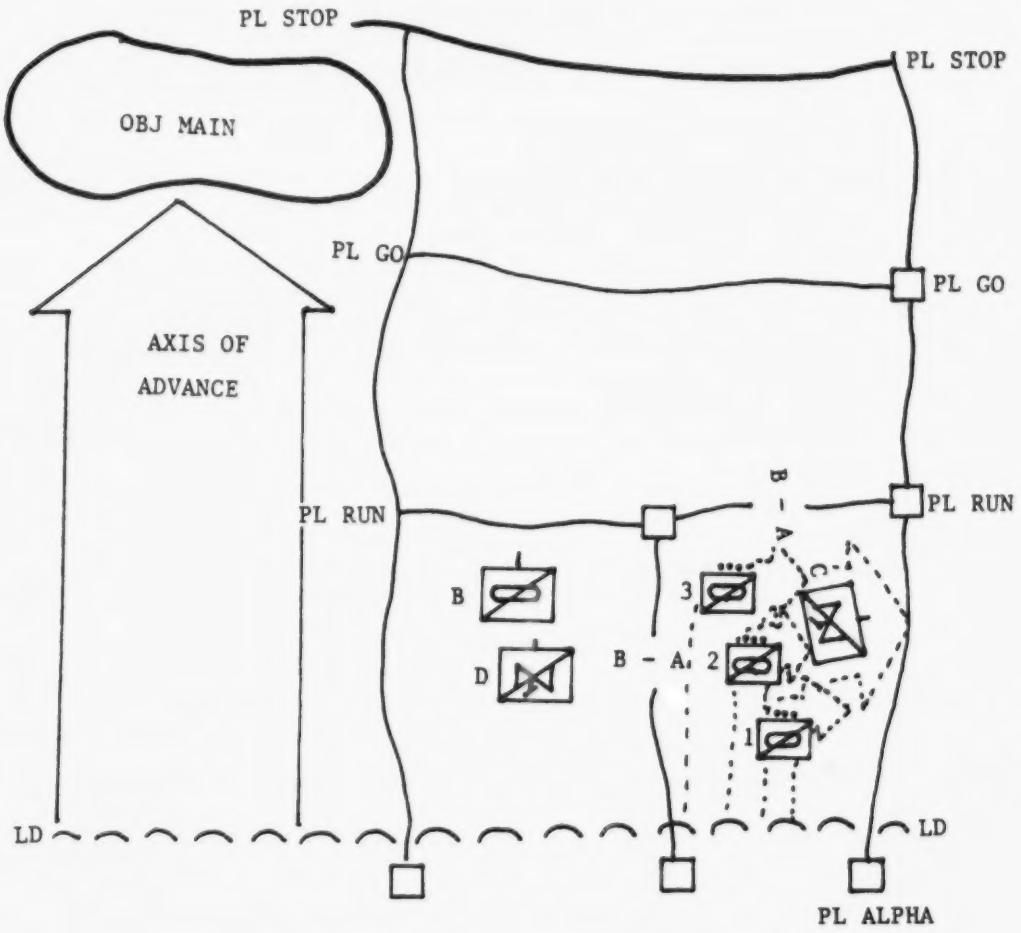


Figure 4-8

4. During the deployment phase, A Troop has been given a relatively small sector to allow the troop to quickly occupy th initial screen line (PL ALPHA). This ensures that the main boc is given as much protection as early as possible as it crosses the LD. C Trp (Air) which is OPCON to A Trp recons forward of Trp to ensure the area between the main body and the initial screen line is clear of enemy forces. In a similar manner D Tr (Air), which is OPCON to B Trp, recons forward of the ground force.

5. Once the Squadron is set on its initial screen line, the deployment phase ends and phase 2, execution begins.

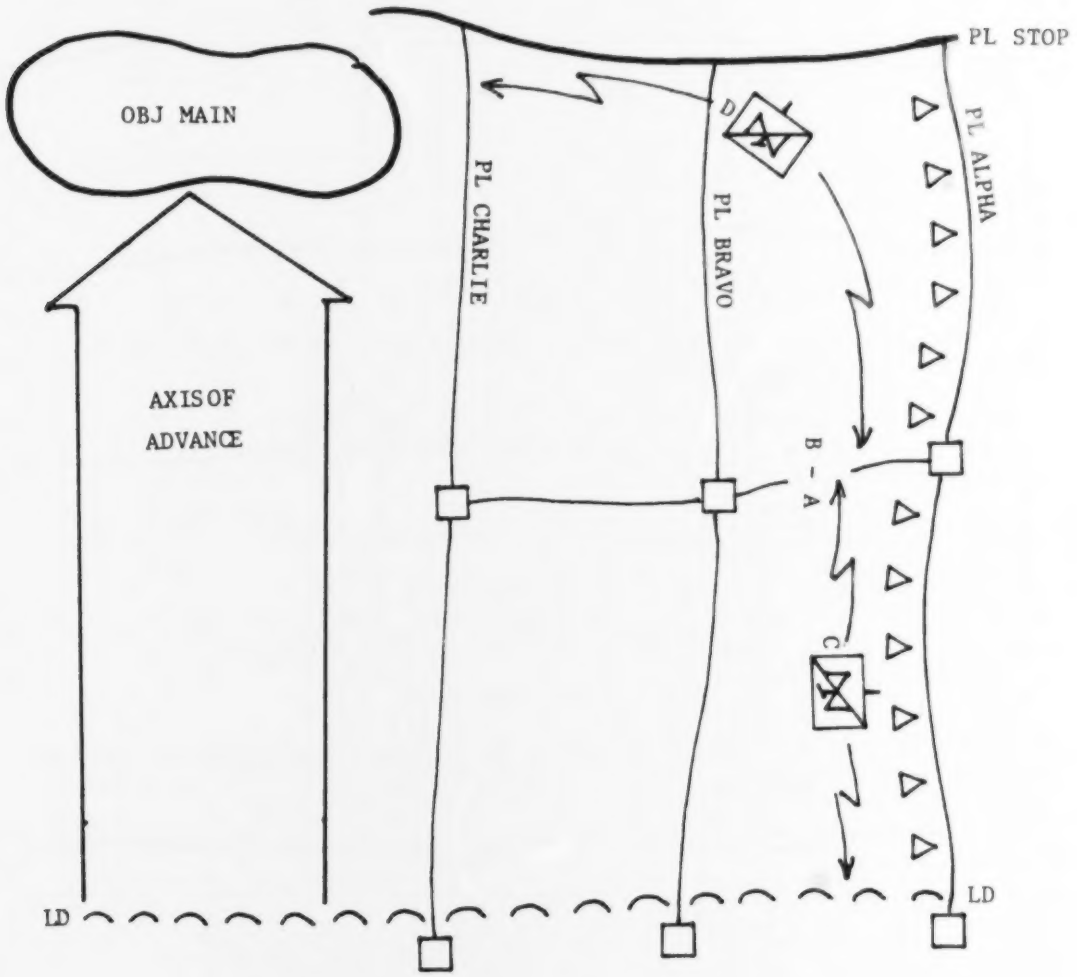


Figure 4-9

6. During the execution phase, the ground cavalry troops establish OPs along avenues of approach into the area. Their purpose is to gain and maintain contact with the enemy, harassing him with direct and indirect fires, while avoiding decisive engagement. The Air Troops may be employed in one of three ways initially:

a. The Air Troop may establish aerial OPs to augment the Troop's ability to adequately cover the screen line. This may be necessary when the squadron operates over an extended frontage.

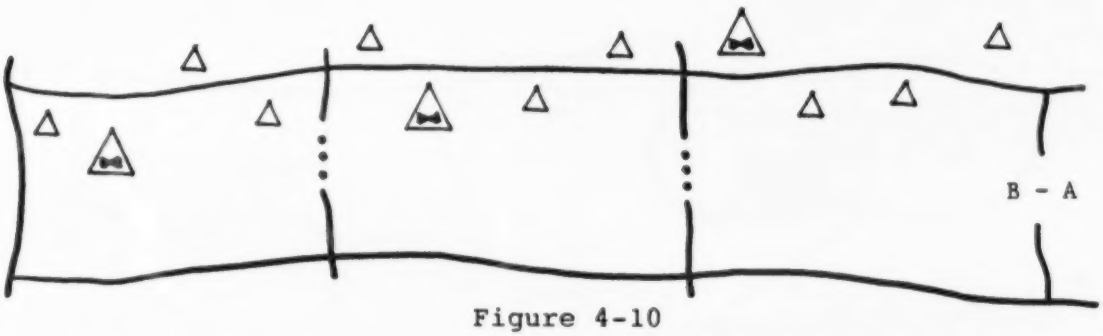


Figure 4-10

b. The Air Troops may patrol dead space which cannot be observed by ground OP,s.

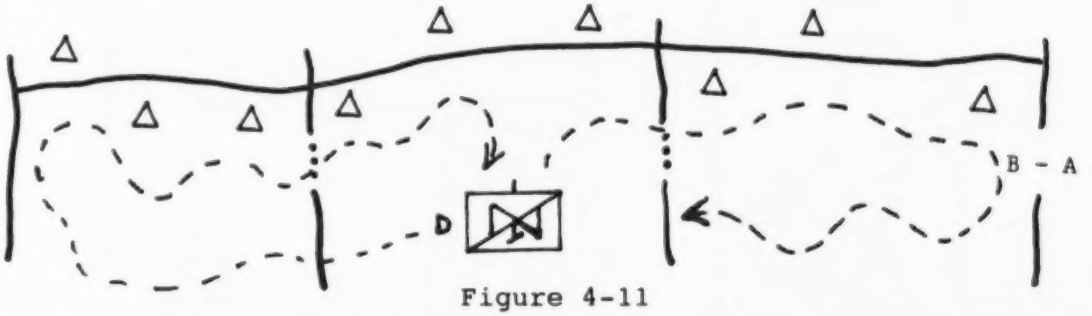


Figure 4-11

c. The Squadron may establish an air screen forward of the ground troop screen line.

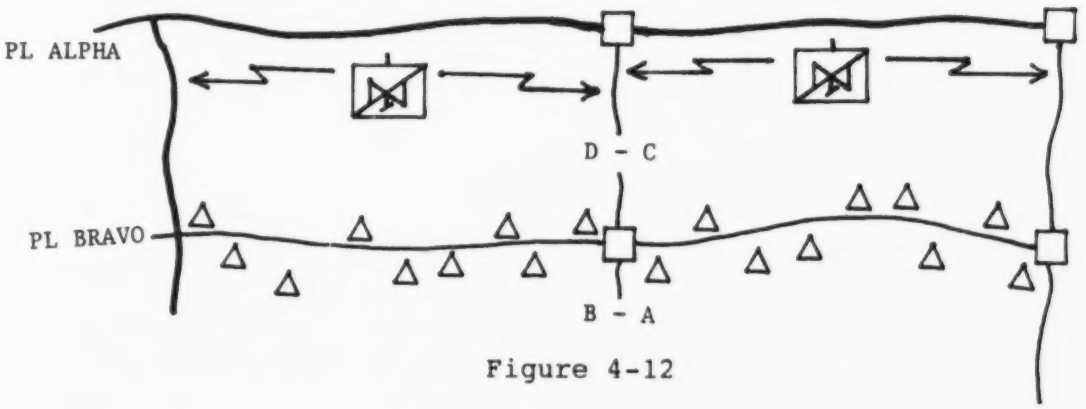


Figure 4-12

7. Upon gaining contact with enemy reconnaissance forces, the Squadron begins engaging with direct and indirect fires. If enemy reconnaissance forces cannot be destroyed and decisive engagement is imminent, the commander will order withdrawl to subsequent screen lines. Contact must be maintained with the enemy during the withdrawal.

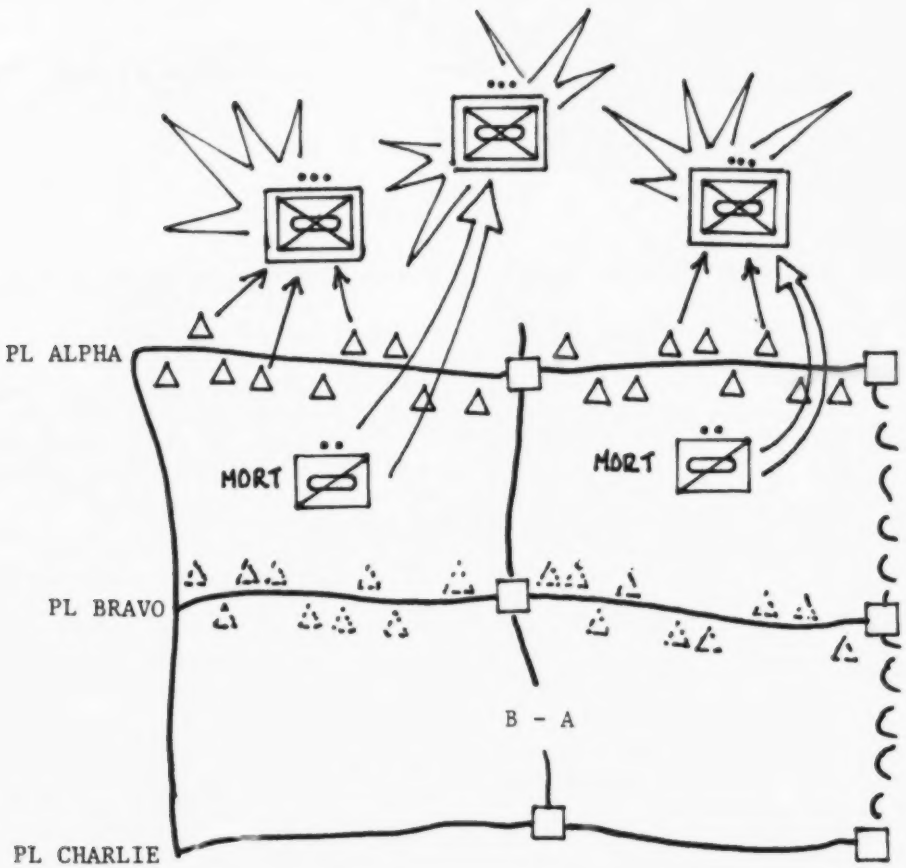


Figure 4-13

8. During the withdrawal, Air Cav assets continue to impede and harass enemy forces with direct and indirect fires to keep the pressure off ground cavalry forces until they are set in new positions. As Air Cav enjoys a considerable maneuver advantage, the risk of decisive engagement is much lower. This allows for an orderly withdrawal to PL BRAVO by ground cavalry assets, while at the same time effectively impeding the enemy advance.

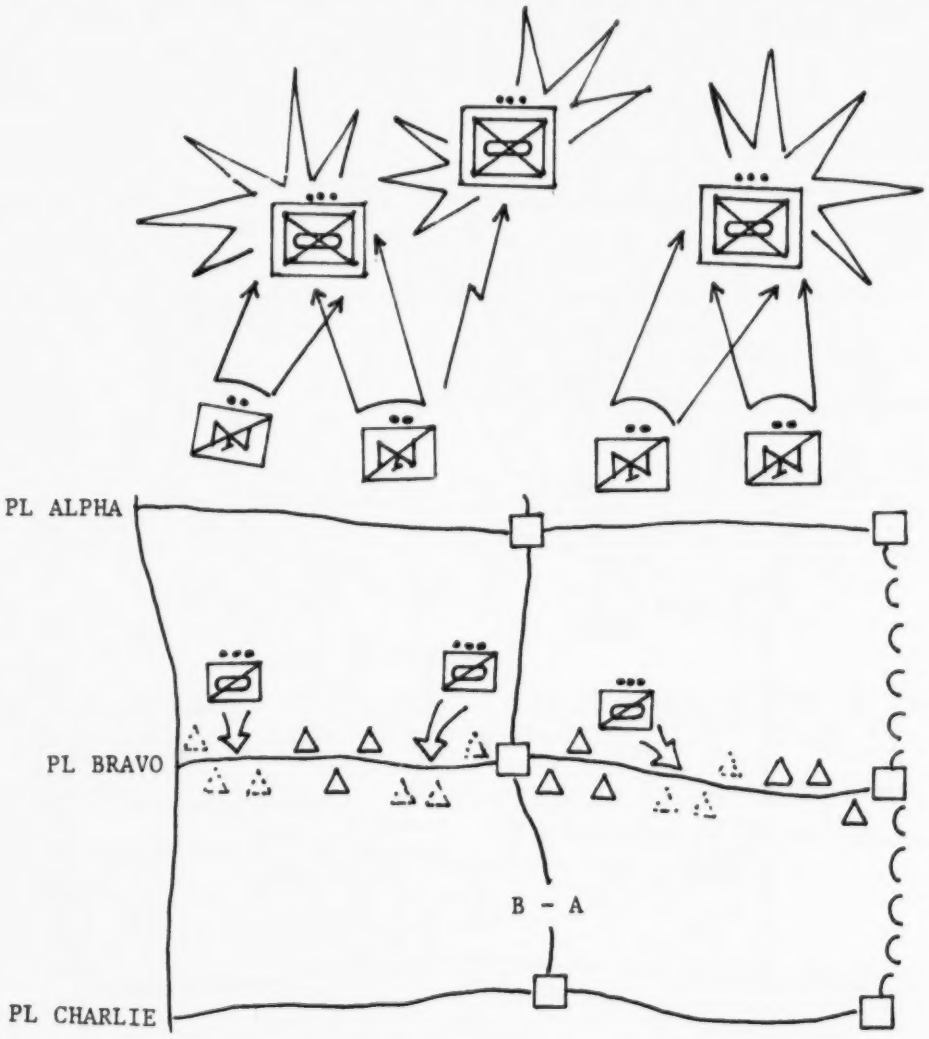


Figure 4-14

g. Air Cavalry Troop Guard Operations - Guard forces, in addition to providing early warning, must protect the main body from enemy direct fires. Implied in the guard mission is the requirement to hold terrain and a willingness to accept decisive engagement in order to provide the necessary degree of protection. Because attack helicopters cannot hold terrain, the air cavalry should not be assigned a guard mission as an independent force.

(1) Air Cavalry can participate in guard missions. It's mission is to conduct reconnaissance and to augment surveillance and firepower of a larger force.

(2) If necessary, the attack helicopter assets of the cavalry can be scrambled to provide a responsive and flexible anti-armor capability in support of guard operations.

(3) A detailed discussion of guard operations is contained in FM 17-95.

4-3 REGIMENTAL AVIATION SQUADRON (RAS) OPERATIONS

a. The RAS provides the ability to plan, execute, and support a variety of aviation operations in support of the Regiment's scheme of maneuver. The unique combination of Air Cavalry, Attack Helicopter, Utility Helicopter and Special Electronics Mission Aircraft (SEMA) provides the Regimental Commander with the ability to:

(1) Accelerate the tempo of combat operations.

(2) Rapidly mass anti-armor firepower.

(3) Extend the depth of his operations.

(4) Enhance command and control throughout the area of operations.

(5) As an economy of force, to employ a 4th maneuver squadron to attack, delay or provide security.

b. Additionally, the RAS enhances the Regiment's ability to accept and support aviation assets from Corps and integrate those assets rapidly into the regimental plan.

c. The RAS is an integral component of the Armored Cavalry Regiment and fights, not as a separate entity, but as a member of the combined arms team. Thus, to appreciate the role of the RAS, it is first necessary to understand the role of the Regiment itself.

(1) The ACR is organized and equipped to provide the Corps Commander a combat-maneuver force capable of conducting independent operations in an economy force role. Within the ACR is contained a full compliment of combat, combat support and combat service support systems which allow the regiment to operate at extended distances from the main body for up to 72 hours. This allows the Regiment to perform missions that provide the Corps Commander the time and space necessary to achieve his operational objectives.

(2) The ACR performs a variety of missions to provide the means necessary for Corps to achieve its operational goals. These missions include but are not limited to:

(a) Reconnaissance

(b) Security

(c) Movement to Contact

(d) Hasty and Deliberate Attack

(e) Exploitation and Pursuit

(f) Raid

(g) Defend

(h) Delay

(3) Most often, the ACR operates as an economy of force, thus allowing the Corps Commander the ability to mass the combat power of his divisions to achieve the ends he seeks. For example, the ACR could be assigned the defense of a division sector to allow the commander the flexibility to attack elsewhere with a division size force.

(4) It is within the context of the role of the Regiment, that the RAS fights. The real time information provided by the Air Cavalry, the rapid maneuver of the ATKHTs, the support provided by the lift helicopters are all key to the success of the Regiment's fight.

(5) The Covering Force mission provides an excellent example of how the Regiment fights and where the RAS fits into the ground scheme of maneuver.

(a) In offensive operations the covering force must develop the enemy situation to determine enemy strengths and disposition, destroy enemy reconnaissance and security forces, and deny the enemy information about the size, strength and composition of the main body.

(b) In the defense, the covering force must determine the size, direction strength, and composition of the enemy. Enemy reconnaissance, security and first echelon units must be destroyed. To accomplish these tasks, the covering force must deceive the enemy and force him to deploy into deliberate attack formations. This in turn serves to slow the enemy's rate of advance, and buys time for the Corps Commander to position main body forces and prepare to fight. Last, as the covering force develops, the ACR shapes the battlefield by canalizing enemy forces to best support the Corps Commander's operations plan.

(6) In the covering force fight, the Air Cavalry Troops augment efforts to gain and maintain contact with enemy forces early, providing reaction time for the Regiment, SEMA aircraft target 2nd echelon divisions and conduct offensive electronic warfare to disrupt C2. Attack helicopters are used to attack lucrative enemy armor and mechanized forces in support of the covering force. Last, the Assault Helicopter Troop provides a means to rapidly move troops and equipment. Additionally, Command and Control is enhanced by providing Regiment and Squadron Commanders the ability to maintain effective communications, to rapidly jump Tactical Operations Centers and to move to critical points on the battlefield to oversee operations.

SECTION V

COMBAT SERVICE SUPPORT

COMBAT SERVICE SUPPORT

The combat service support of Air Cavalry units presents a unique challenge. The very nature of cavalry, with its divers mission, equipment and personnel, demands a flexible and responsive support system. The combat support system has no other purpose than to maintain and support the weapons system and their operators.

5-1 PRINCIPLES OF COMBAT SERVICE SUPPORT

Combat service support is comprised of logistics, personnel, service support and civil affairs. Simply stated, the purpose of combat service support is:

a. Arm the system.

b. Fuel the system.

c. Fix the system.

d. Evacuate the system.

e. Man the system.

Combat service support must be constantly pushed forward to the using units to provide them the means to accomplish their missions. At all echelons combat service support activities must be located close enough to the supported unit to allow for timely resupply. using the supported unit's organic transportation assets. Combat service support is provided as far forward as the tactical situation permits. At times, ammunition and other supplies for an armored cavalry platoon must be carried forward in an armored personnel carrier.

5-2 COMBAT SERVICE SUPPORT PLAN

The combat service support (CSS) plan should provide adequate and timely support to the tactical operation. It is complete, simple and flexible. It must be prepared with foresight and coordinated with all appropriate staff officers. Combat service support and tactical planning must be concurrent. Units in the squadron stock essential combat supplies (e.g., rations, fuel, lubricants, ammunition, unit basic loads). These prescribed or basic loads enable units to operate if the supply chain is broken temporarily. They must be maintained, rotated and replenished when supplies become available. The minimum stockage level is normally designated by a higher command such as a Division or Corps.

5-3 RESERVE

Reserve supplies are frequently carried by cavalry units to facilitate sustained, widely dispersed operations. These reserves will consist of additional food, fuel, ammunitions and critical repair parts not normally carried as part of the unit's prescribed load.

5-4 AVIATION COMBAT SERVICE SUPPORT

Organizations - Division Cavalry. The Aviation Unit Maintenance Platoon (AVUM) in the Headquarters and Headquarters Troop (HHT) provides the majority of the aviation specific CSS for the squadron. The platoon is organized,as follows:

a. The Platoon Headquarters consists of the platoon leader, the platoon sergeant, and a six man quality control section. The platoon leader is responsible for all aviation maintenance, repair, and supply functions within the squadron, and for coordinating with the squadron S4 for external support of aviation CSS operations.

b. The quality control section of the platoon headquarters maintains aviation maintenance records for aircraft within the squadron, performs technical inspections of the aircraft and internal maintenance operations, performs battle damage assessment of aircraft and assists the Aviation Maintenance Section and Aircraft Component Repair Section in the conduct of their operations.

c. The aviation maintenance section performs routine and special inspections of squadron aircraft, avionics and related equipment, recovers aircraft within the capabilities of the squadron, and provides forward maintenance support to the air troops. The section also maintains PLL for squadron aircraft and bench stock in support of maintenance operations.

d. The Aircraft Component Repair Section performs troubleshooting and analysis for major aircraft systems including engine, power train, armament and rotor systems, and performs required adjustments or replacement of major components.

e. The aircraft supply section is responsible for supporting the aviation fuel and ammunition requirements of the squadron. The section establishes Forward Arming and Refuel Points (FARP) in support of operations and assists air crews in performing rearming and refueling.

f. The RAS is similarly organized however the AVUM organization is Troop size (AVUM). This organization also has a Quality Control Section, an Aircraft Maintenance Platoon and an Aircraft Component Repair Platoon. All aviation fuels and lubricants and FARP assets fall under the control of the HHT Class III/V Platoon.

5-5 THE AVIATION MAINTENANCE SYSTEM

a. Aviation maintenance functions are performed at three levels: Aviation Unit Maintenance (AVUM), Aviation Intermediat Maintenance (AVIM), and DEPOT Maintenance.

b. The first of these, AVUM, consists of maintenance performed within the Troops and maintenance performed by the AVUM Troop/Platoon at squadron level.

(1) At Troop level, air crews perform daily preventive maintenance and serviceability inspections. Crew chiefs within the troop do minor adjustments, component replacement, and repairs within authorized limits.

(2) At Squadron level AVUM maintenance personnel perform the following tasks:

- preventive maintenance and special inspections.

- Troubleshooting.

- Replacement of worn, damaged, or unserviceable components.

- Perform minor repairs on power plants.

- Perform operational and continuity tests on electrical components and systems.

- Perform battle damage assessment and limited aircraft recovery.

- Perform airframe repair within capabilities.

- Perform servicing, functional adjustment, and minor repair or replacement for flight control, propulsion, power train and fuel systems.

- Inspect and service hydraulic components.

- Evacuate unserviceable components or end items that are beyond organic repair capability to the AVIM.

- Rig aircraft for recovery by AVIM.

c. Aviation Intermediate Maintenance (AVIM). The AVIM capability for all aircraft is provided by the Transportation Aircraft Maintenance Company (TAMC) at Corps. AVIM activities provide mobile "one stop" maintenance support.

(1) In addition to authorized AVIM level tasks, AVIM will also perform AVUM functions when necessary in case of excessive backlog or skill shortage in supported units. Repair of equipment for return to user emphasizes support of mission-capable requirements. Authorized maintenance includes replacement and repair of modules or components and end items which can be accomplished efficiently with available skills, tools and equipment.

(2) The following tasks are typically performed by AVIM units:

- Conduct the direct exchange (DX) program for AVUM units by repairing selected items for return to stock when such repairs cannot be accomplished at the AVUM level.

- Inspect, troubleshoot, test, diagnose, repair, adjust, calibrate and align aircraft system modules or components.

- Determine the serviceability of specified modules or components removed prior to the expiration of the time-between-overhaul or finite life. Unserviceable beyond the capability of AVIM to repair are normally evacuated to DEPOT.

- Minor repair of airframes and fabricate parts with available tools and equipment.

- Perform aircraft weight and balance inspections and other special inspections which exceed AVUM capability.

- Provide float aircraft.

- Provide collection and classification services for serviceable or unserviceable material.

- Operate a cannibalization activity in accordance with AR 750-50.

- Responsible for aerial recovery of aircraft sustaining major damage.

d. Depot maintenance. Several stateside depots perform major structural repair of airframes and rebuild of aircraft components. Refer to FM 55-411 for a detailed discussion of depot functions.

5-6 MAINTENANCE OPERATIONS

a. Because of the speed and rapid mobility necessary during the conduct of cavalry operations and because of the lack of mobility associated with some of the equipment and operations associated with the AVUM Platoon/Troop, maintenance operations will normally be echeloned. A portion of AVUM collocates with the squadron field trains, the remainder is positioned in the vicinity of the Aviation Maintenance Company. Figures 5-1, 5-2, and 5-3 graphically depict the maintenance function allegement. When echeloned, the aircraft component repair section/platoon leader supervises the operations in the division rear while the aviation maintenance section leader supervises forward operations.

b. Forward maintenance operations. The squadron field trains provides as a base of operations for forward maintenance. Personnel at this location conduct preventive maintenance inspections, troubleshoot equipment malfunctions, perform battle damage assessment and repair or replace unserviceable components to return aircraft to combat ready status. Aircraft requiring repairs beyond the capabilities of the forward support maintenance element are evacuated to the division rear area for repair by the AVUM plt/troop (-) or AMC, as appropriate.

c. Air Cavalry Troop Trains are collocated with the forward element of the AVUM platoon. The availability of Technical Inspectors (TIs) and ability of the AVUM element to effect repairs beyond the capabilities of the Air Cavalry Troop personnel will greatly enhance the availability of aircraft within the troops.

d. The Forward Support Team (FST) of the AMC will also be located in the Squadron Field Trains. Thus, all maintenance and supply operations necessary to support the air troops can be coordinated at a single point on the battlefield.

5-7 FARP Operations

a. The RAS Class III/V Platoon has the resources to operate a Class III/V supply point and up to five FARPs, Division Cavalry may operate up to 3 FARPs but will normally employ only two FARPs. FARPs should not be dedicated to a particular troop; rather they should be established throughout the battle area. This will allow all units to move freely to the nearest FARP. The ammunition and POL section/platoon leader closely monitors all FARP activities. The commander or the S-3 controls aviation troop movements to the FARPs so that operations are not overloaded or congested.

b. The Class III/V supply point is near the squadron assembly area. The COSCOM will transport supplies to the Class III/V supply point, or the ammunition and POL section/platoon will transport them from a railhead or drop point. The Class III/V supply point will maintain bulk classes III and V. Empty FARP tankers and ammunition trucks will rotate with squadron reserve vehicles at the Class III/V supply point. Aircraft rearming and refuel points will be established; however, most aircraft will use FARPs. The 500 gallon collapsible drums filled with JP-4/8 and cargo bags with palletized ammunition should be a reserve stockage at the Class III/V supply point. The drums, forward area refueling equipment and palletized ammunition should be used to resupply an overloaded FARP rapidly.

c. The FARPs are located 18 to 25 kilometers from the Forward Line of own Troops. Each FARP has one or two 2,500 gallon HEMTT tankers and one or two HEMTT ammunition cargo trucks. Armament personnel, fuel handlers, ammunition specialists and heavy vehicle drivers operate the FARP. An aircraft maintenance contact team from the AVUM Platoon/Troop and medics form HHT may also be found at the FARP. The FARPs are characterized by rapid setup and displacement. FM 1-104 discusses FARP operations in detail. The factors of METT-T will influence how often the FARPs move. These factors also determine if troops go to the Class III/V supply point for resupply or if supplies will be transported to the Troop.

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